

Davis Equipment - Parts Contacts

Brad Funkhouser

General Manager | bfunkhouser@davisequip.com

Mike Carder

Parts Sales | mcarder@davisequip.com

Rachel O'Brien

Parts Sales | robrien@davisequip.com

Mike Hilbrands

Parts Sales | mhilbrands@davisequip.com



TOLL FREE PARTS AND SERVICE NUMBER

Expert help is just a free call away at:

1-800-747-8300

Instant Fax Order Line

Fax in your order to our fax lines, instantly!

515-270-0117

Extended In-Season Parts Hours

We offer extended hours during your busy season.

**In-Season Emergency
Parts and Service**

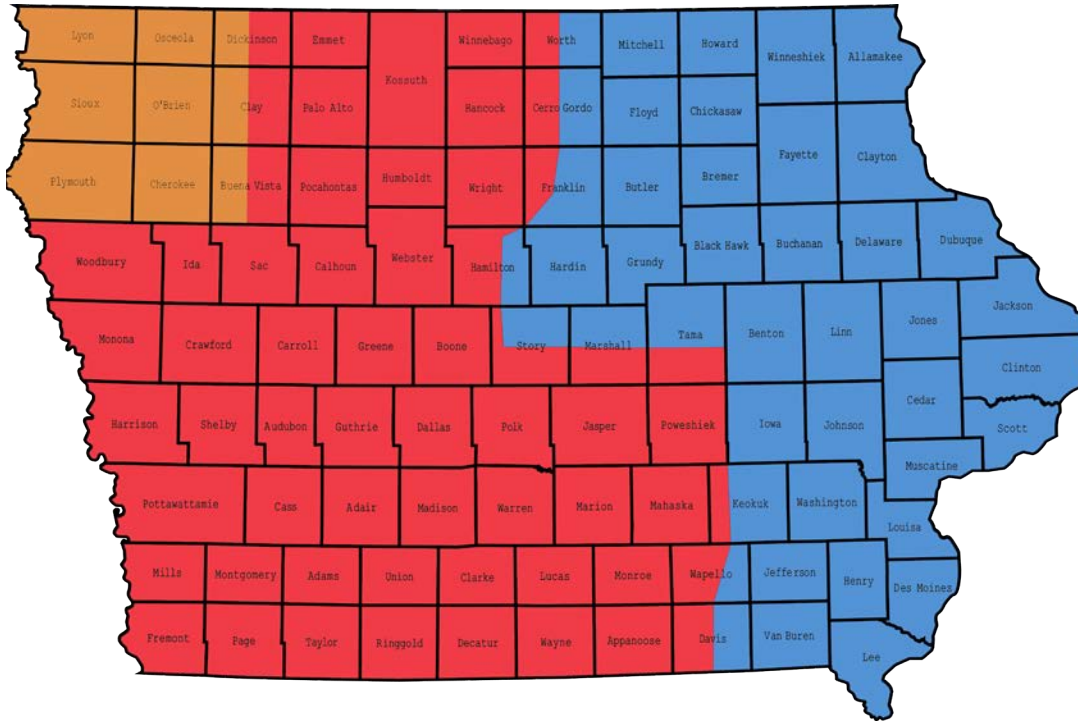
We're here to help you out, with emergency assistance at 1-800-747-8300.

Prices are subject to change without notice.





Davis Equipment - Iowa Contacts



Zach Davis
CEO

Joe Funkhouser
President
jfunkhouser@davisequip.com
Ph: 515-270-8300

Chad Harbaugh
Territory Manager
charbaugh@davisequip.com
Ph: 563-543-5818

Kevin Adams
Territory Manager
kadams@davisequip.com
Ph: 515-851-7149

Adam Hoffman
Territory Manager
ahoffman@davisequip.com
Ph: 612-802-3149



Davis Equipment - Minnesota & Wisconsin Contacts

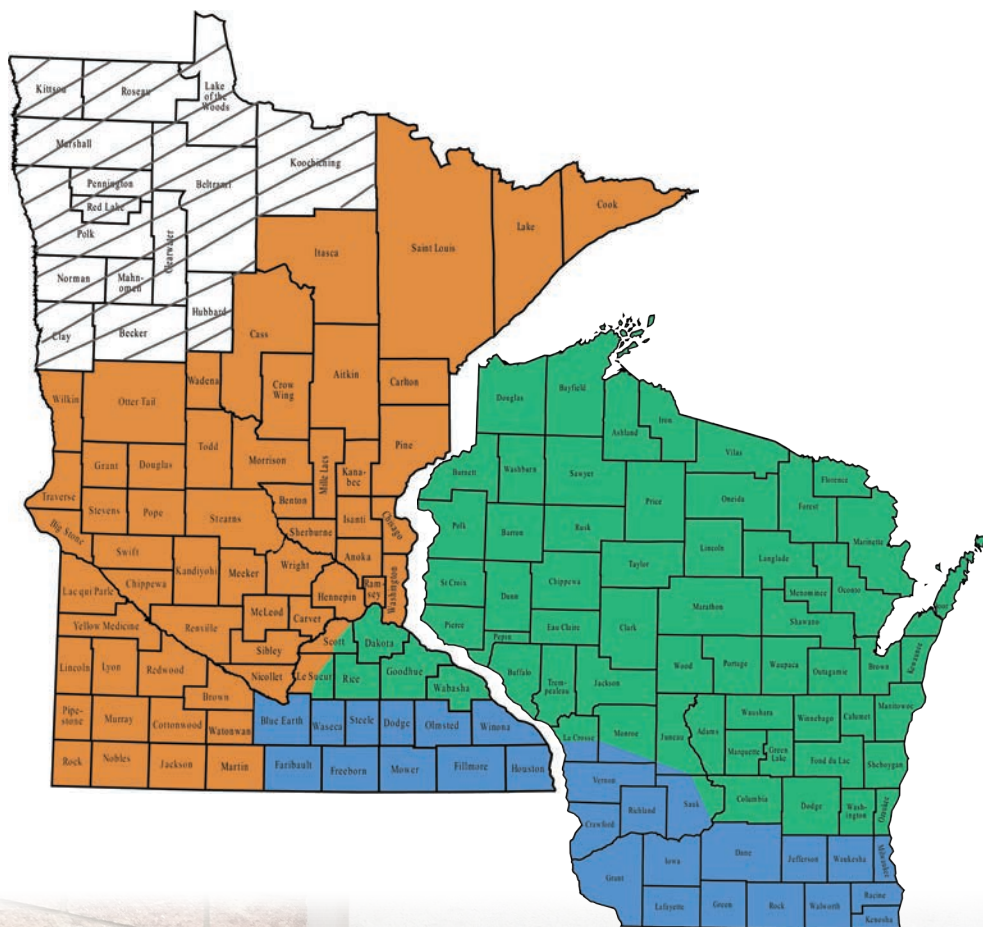


Zach Davis
CEO

Joe Funkhouser
President
jfunkhouser@davisequip.com
Ph: 515-270-8300

Adam Hoffman
Territory Manager
ahoffman@davisequip.com
Ph: 612-802-3149

Chad Harbaugh
Territory Manager
charbaugh@davisequip.com
Ph: 563-543-5818





Doyle Fertilizer Tenders



Doyle Equipment Manufacturing Company is the global leader for quality dry fertilizer handling equipment.

The newest member to the family:

304 SS TOP
AUGER
TENDER

Call today for pricing!



Doyle Fertilizer Tenders



10' Rear Discharge Tender

Standard Features:

- (2) 165 cu. ft. compartments in 12 ga. 304 stainless steel
- 10" x 12 ga. 304 stainless-steel auger tube, and augers with 304 stainless-steel flighting and mild steel pipe
- Heavy duty 304 stainless-steel square tubing main frame
- 1.75 ton per minute discharge rate
- Stainless-steel, manually operated slide gates
- Tender with front and rear ladder
- 20 ft. hydraulically raised and lowered discharge auger, 14 foot discharge height
- Stainless-steel trailer fenders, with Doyle mud flaps
- 18.5 gallon hydraulic tank with temperature gauge, site glass, and large hydraulic filters, metal shot blasted and powder coated bright blue
- Hydraulic pump, cylinders, lines, hoses and fittings
- Roll tarp with stainless-steel end caps
- D.O.T. approved lights, tail and marker
- Factory assembled & tested

16' Side Discharge Tender

Standard Features:

- (4) 129 cu. ft. compartments in 12 ga. 304 stainless steel
- Hoppers have 40 degree side slope
- 10" x 12 ga. 304 stainless-steel auger tube, and augers with 304 stainless-steel flighting and mild steel pipe
- Heavy duty mild steel square tubing main frame, with mild steel "boxed" support arm and cross braces
- 1.75 ton per minute discharge rate
- Stainless-steel manually operated slide gates
- Tender with front and rear ladder
- 20 ft. hydraulically raised and lowered discharge auger, 14 foot discharge height
- Mild steel fenders, with Doyle mud flaps
- 18.5 gallon hydraulic tank with temperature gauge, site glass, and large hydraulic filters, metal shot blasted and powder coated bright blue
- Hydraulic pump, cylinders, lines, hoses and fittings
- Roll tarp with stainless steel end caps
- D.O.T. approved lights, tail and marker
- Factory assembled & tested

Available in all stainless steel.

24' Side Discharge Trailer Tender

Standard Features:

- (3) 258 cu. ft. compartments in 12 ga. 304 stainless steel
- Hoppers have 40 degree side slope
- 10" x 12 ga. 304 SS auger tube, and augers with SS flighting
- Heavy duty mild-steel square tubing main frame, with mild steel "boxed" support arm and cross braces
- 1.75 ton per minute discharge rate
- Stainless-steel manually operated slide gates
- Tender with rear ladder
- 20' hydraulically raised and lowered discharge auger, 16 foot discharge height
- Mild steel fenders, with Doyle mud flaps
- Kabota 66 h.p., 4 cylinder, water cooled diesel engine
- 22 gallon steel diesel tank, metal shot blasted and powder coated safety yellow
- 52 gallon hydraulic tank with temperature gauge, site glass, and large hydraulic filters, metal shot blasted and powder coated Doyle green
- Tandem hydraulic pump
- Roll tarp with stainless-steel end caps
- 14" 43# dual certified wide flange beam main frame
- 2 speed landing gear, rated at 50,000 lbs. of lift
- New Hutch 9700 under slung suspension with 3 leaf high arch spring suspension
- Rockwell 25,000 lb. outboard drums and 16.5" x 7" air brakes
- 22.5 (10) hole Hubpilot
- 255/70R22.5 16-ply radial tires

24' Rear Discharge Trailer Tender Available - Call for Details!



16' Side Discharge Tender

16' Rear Discharge Tender

Standard Features:

- (2) 241 cu. ft. compartments in 12 ga. 304 stainless steel
- 10" x 12 ga. 304 stainless-steel auger tube, and augers with 304 stainless-steel flighting and mild steel pipe
- Heavy duty 304 stainless-steel square tubing main frame
- 1.75 ton per minute discharge rate
- Stainless-steel, manually operated slide gates
- Tender with front and rear ladder
- 20 ft. hydraulically raised and lowered discharge auger, 14 foot discharge height
- Stainless-steel trailer fenders, with Doyle mud flaps
- 18.5 gallon hydraulic tank with temperature gauge, site glass, and large hydraulic filters, metal shot blasted and powder coated bright blue
- Hydraulic pump, cylinders, lines, hoses and fittings
- Roll tarp with stainless-steel end caps
- D.O.T. approved lights, tail and marker
- Factory assembled & tested



Doyle Fertilizer Spreaders

Quality

Runs In The Family



5 & 6 Ton
Ground Wheel Drive

5 Ton
Mid Clearance

8 Ton
Lime / Fertilizer

PTO
Spreaders

2 Ton
Ground Wheel
Drive

The Family is all here!

5 Ton Spreader



Standard Features:

- 14 ga. #304 stainless-steel hopper construction
- Includes front window in hopper
- 2" x 6" tubing frame
- Bolt on box to frame features allows for easy hopper removal from frame
- Heavy duty adjustable hitch
- Heavy duty tongue jack 8,000#
- Tandem 8,000# torsion style axles with 8-bolt hubs
- 14 L x 16.1 hi-speed implement rib tires
- 1" x 1" mesh type heavy duty 8" conveyor chain
- Twin dish type spinners 20 5/16" diameter with 4 adjustable stainless-steel blades – standard 50' spread pattern
- Includes hydraulic cylinder to engage metal turn-clean style press wheel
- Running gear of spreaders are metal shot blasted, and coated bright blue for unmatched corrosion resistance

Doyle Fertilizer Spreaders



6 Ton Spreader



Standard Features:

- 14 ga. #304 stainless-steel hopper construction
- Includes front window in hopper
- 2" x 6" tubing frame
- Bolt on box to frame features allows easy hopper removal from frame
- Heavy duty adjustable hitch
- Heavy duty 4x4 tongue jack 12000#
- Tandem 8000# torsion style axles with 8-bolt hubs
- 14 L x 16.1 high speed implement rib tires
- 1" x 1" mesh type heavy duty 8" conveyor chain
- Twin dished type spinners 20 5/16" diameter with 4 adjustable SS blades
- standard 50' spread pattern
- Includes hydraulic cylinder to engage metal turn-clean style press wheel
- Running gear of spreaders are metal shot blasted, and coated bright blue for unmatched corrosion resistance

8 Ton Spreader



Standard Features:

- Heavy duty #304 stainless steel hopper construction
- Includes front window in hopper
- Bolt on box to frame feature allows for easy hopper removal from frame
- Tandem 10,000# torsion style axles with 8-bolt hubs
- 19 L x 16.1 tires
- 1" x 1" mesh type heavy duty #304 stainless steel conveyor chain - 8" wide
- Conveyor is driven by press wheel, engaged and disengaged with hydraulic cylinder connected to tractor
- Utilize two sets of sprockets for conveyor rates
- Includes adjustable material divider for proper material placement on spinners to insure uniform spread pattern at all application rates, material diverter manufactured in stainless steel
- Hydraulically driven twin "dished type" spinners, 24" diameter with 4 blades per spinner - standard 60' spread pattern
- Tandem 10 k highway axles
- Heavy duty 4x4 tongue jack

8 Ton Combo Lime & Fertilizer Spreader



Standard Features:

- Heavy duty #304 stainless steel hopper construction
- Includes front window in hopper
- Bolt on box to frame features allows easy hopper removal from frame
- Heavy duty 4x4 tongue jack 12000#
- Tandem 10,000 # torsion style axles with 8-bolt hubs
- 19 L x 16.1 tires
- 1" x 1" mesh type heavy duty #304 SS conveyor chain-20" wide
- Conveyor is driven by press wheel, engaged and disengaged with hydraulic cylinder connected to tractor
- Utilize two sets of sprockets for conveyor rates
- Includes adjustable material divider for proper material placement on spinners to insure uniform spread pattern at all application rates, material divider manufactured in #304 stainless steel
- Hydraulically driven twin "dished type" spinners, 24" diameter with 4 blades per spinner



Doyle Big Shot Series



6 & 8 Ton Capacity Row Crop Spreader

- #304 stainless steel hopper construction
- Bolt together design, hopper to chassis
- Adjustable axle with 10-bolt oil bath hubs
- Axle adjustment from 88" to 120" centers
- (2) 380/90R-46 tires
- 1" x 1" mesh type heavy duty #304 SS conveyor chain, 8" wide
- Conveyor driven by press wheel, engaged and disengaged with hydraulic cylinder connected to tractor
- Hydraulically driven twin "dished" spinners, 24" diameter with 4 blades per spinner, specially designed for extremely accurate broadcasting of spreader



Big Shot Floater Truck Spreader

- 102-1/4" wide, #304 stainless steel hopper construction
- Hoppers available in 11' thru 17' lengths
- 30" wide belt over chain, heavy duty pintle chain, 3/8" thick cross bars with multi-ply belt
- Double PWM valves for belt & spinner control
- Closed loop spinner control
- Extra heavy duty 6:1 reducer spur gear conveyor drive (high efficiency-low maintenance)
- 24" dual dished spinners, mounted on #304 stainless steel undercarriage
- "Easy-set" fully adjustable material divider which allows fine adjustment in spread pattern (fertilizer or lime) all #304 stainless steel



Big Shot Row Crop

- 102-1/4" wide, #304 stainless steel hopper construction
- 88" - 120" adjustable tire widths (2 different models)
- Hoppers available in 11' thru 14' lengths
- 30" wide belt over chain, heavy duty pintle chain, 3/8" thick cross bars with multi-ply belt
- Double PWM valves for belt and spinner control
- Extra heavy duty 6:1 reducer spur gear conveyor drive (high efficiency- low maintenance)
- Standard with 24" dual disc dished spinners, mounted on #304 stainless steel undercarriage
- "Easy-set" fully adjustable material divider which allows fine adjustment in spread pattern (fertilizer or lime)



Big Shot Double Barrel Spreader

- 102" wide, #304 stainless steel hopper construction
- 30" wide belt over chain, heavy duty pintle chain, 3/8" thick cross bars with multi-ply belt
- Extra heavy duty 6:1 reducer spur gear conveyor drive
- Standard with 24" dual disc dished spinners, mounted on #304 stainless steel undercarriage
- "Easy-set" fully adjustable material divider which allows fine adjustment in spread pattern (fertilizer or lime) all #304 stainless steel
- 2nd compartment #304 stainless steel insert (removable)
- 20" wide SS conveyor chain



Top Shot Aggregate Lime/ Fertilizer Conveyor



Standard Features:

- Heavy duty 7 ga. #304 stainless steel conveyor frame
- 30" wide, 3-ply, 330# smooth top rubber belting
- 12'-6" discharge height
- 4" heavy duty troughing rollers and straight rollers with sealed bearings
- Automatic hydraulic belt tensioners
- Kubota V1505T 45hp. turbo diesel engine
- Heavy duty gear box drive
- Super single flotation tires
- Low profile intake hopper



Field Loader Conveyor

Standard Features:

- 35' overall length, with a 10' horizontal section, and a 25' incline section
- 13'-6" discharge height
- #304 stainless steel conveyor, with powder coated mild steel tubing undercarriage (SS optional)
- 24" wide Crescent top belt, with stainless steel lacing
- 20 HP Honda gas engine drive
- Up to 150 tons per hr. discharge rate (based on 60 lb. per cu. ft. material)
- Square tubing style take- up assemblies



Doyle Fertilizer Blending & Handling Equipment

The World Depends on **DOYLE**

Fertilizer Blending and Handling Equipment



Field Loader



16" & 24" Portable Belt Undercar Conveyors



2, 5, 6, 8, 10, 13, & 16 Ton Rotary Blenders



1212 & 1616 Flat / Incline Chain Paddle Conveyors



6,8, & 10 Ton Vertical Blenders



2 Ton Free Standing Conditioner Hopper



18" & 24" Portable Belt Conveyors



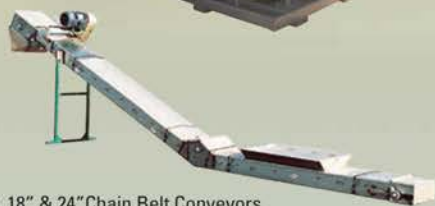
10,13 & 16 Ton "Fatboy" Vertical Blenders



8 Ton Paddle Mixer



FBL 1212 & FBL 1214 Overhead Chain Paddle Conveyors



12", 18" & 24" Chain Belt Conveyors



Doyle Fertilizer Blending & Handling Equipment

Autobatch Blend Systems

Automate your fertilizer blending operations with a Doyle Autobatch Blend System. Increase accuracy, speed and efficiency.

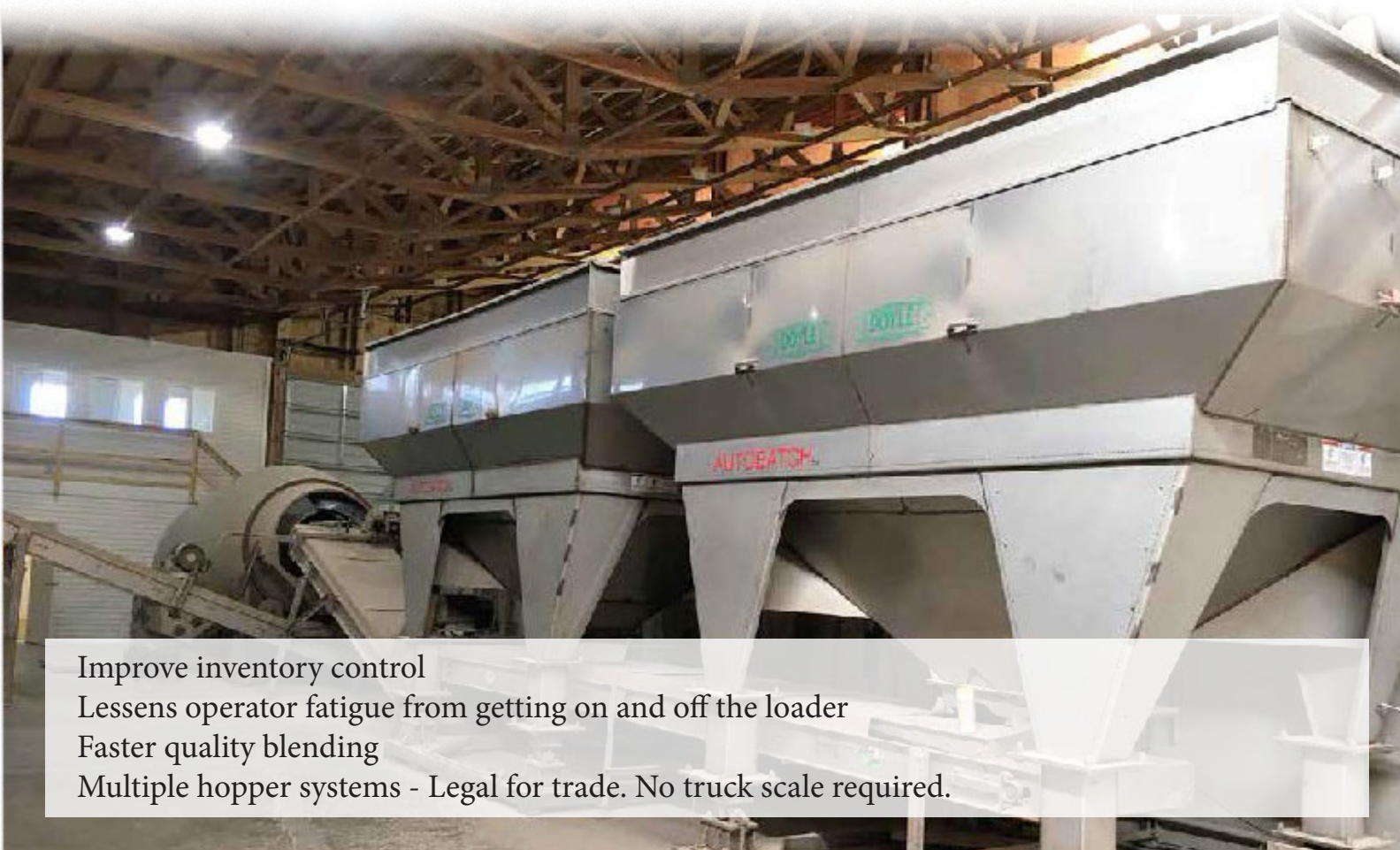
Improve inventory control, by capturing the actual weight of each product in the blend, or with straight product direct load out.

The system reduces operator fatigue by allowing them to operate the system from the loader with an iPad.

By utilizing 36" product conveyors this is one of the fastest systems available for blending large volumes of fertilizer, or the blend drum can be bypassed to provide for loading unblended product directly to trucks.

Doyle's AUTOBATCH® Blend System will integrate with most agronomy and accounting software programs.

- Operate either a rotary or vertical blender with one or more hoppers from the loader
- Impregnation units can also be operated from the loader
- Each time a product is added to a hopper, the operator can "capture" the weight of the product on the iPad
- Orders can be sent to the iPad from customer's accounting software
- Software integration: When an order is complete, the scale weights for each product are sent back to the customer's software to:
 - A) Generate load tickets
 - B) Product is deducted from inventory
 - C) Loads are ready for invoicing
 - D) Can be utilized in feed mills, for polymers, and most bulk blended products



Improve inventory control
Lessens operator fatigue from getting on and off the loader
Faster quality blending
Multiple hopper systems - Legal for trade. No truck scale required.

Doyle Fertilizer Blending & Handling Equipment



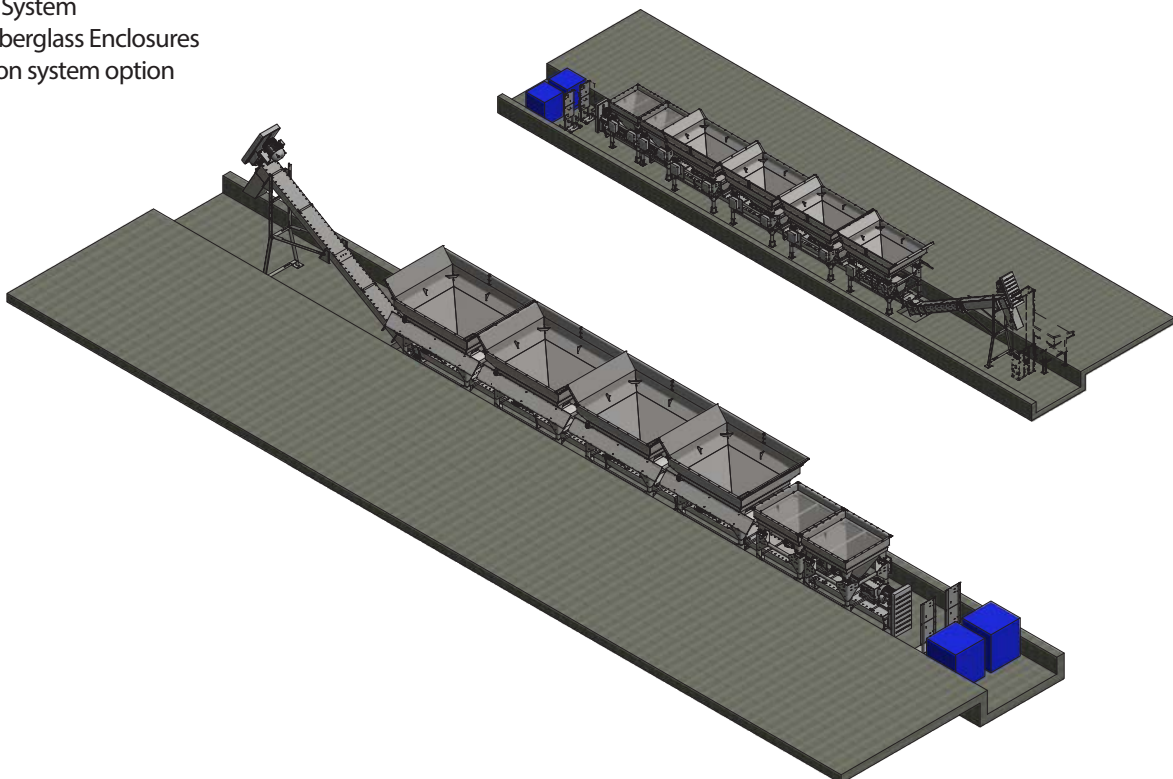
Declining Weight Blend System

The Doyle Declining Weight Blend System uses a High Capacity Stainless Steel "Flat-Wire Chain" Metering System.

The system reduces operator fatigue by allowing them to operate the system from the loader with an iPad, or the system can be operated from a control room desk top computer.

Declining weight bins and micronutrient hoppers features include:

- Stainless Steel Heavy Tubular Support Frame
- Shaft Mounted Gear Reducer Drive
- Variable Frequency Drive System
- Stainless Steel Rice Lake 4 Load Cell System
- Doyle's Operating and Blending Software – written and serviced by Kahler Automation
- Software Integration option with most major agronomy and accounting software
- Main Disconnect Panel, Breakers and Motor Starters for all 3-Phase Equipment with Resettable Overloads
- Interlocked System
- NEMA 4X Fiberglass Enclosures
- Impregnation system option



Doyle Fertilizer Blending & Handling Equipment



DOYLE 24 TON DIRECT DRIVE ROTARY BLENDER

STANDARD FEATURES INCLUDE THE FOLLOWING:

- 120" DIAMETER BLENDER DRUM
- 3/16" #304 STAINLESS STEEL DRUM AND FLIGHT CONSTRUCTION
- BLENDER FRAME 6" X 6" X 3/8" MILD STEEL TUBING FRAME CAPPED ALL ENDS
- 125 HP. TEFC 3-PHASE MOTOR
- P7300 ZF INDUSTRIES PLANETARY DRIVE GEAR REDUCER
- HEAVY DUTY GREASEABLE TRUNION WHEELS
- MACHINED CASTER RING (100% ROUND)
- # 304 STAINLESS STEEL HEAD IN DRUM WITH STAINLESS STEEL INTERFACING GUSSETS
- INCLUDES DISCHARGE CHUTE
- INCLUDES 28" DIAMETER STAINLESS STEEL INTERNAL AUGER, PIPE AND FLIGHTING
- OPTIONAL 304-STAINLESS STEEL FRAME

24 TON ROTARY WITH AUTOBATCH® SYSTEM



Simonsen Flow-Max Top Auger Tenders

Truck and Trailer Mounted

The top auger tender offers a number of advantages for fertilizer handling and transportation!

Durability

409 or 304 stainless-steel hopper construction, auger tubing and flighting combined with heavy-duty frame construction, with maximum bracing, struts and heavy-duty hydraulics set the standard quality.

Flexibility

Increased unloading height, as high as 20' off the ground.

Efficiency

A steep, 40-degree side slope on each of the compartment walls means fast, complete unloading, virtually eliminating material bridging. The durable 10-13-10 auger system is powered by direct drive hydraulic motors with no chains or sprockets. All hydraulic controls are located conveniently at the rear of the tender on the fender. The augers system makes quick work of delivering the materials to their destination.

Versatility

The top auger unloading system which allows the operator to unload into multiple compartment fertilizer applicators by simply swinging the auger instead of moving the truck. The auger rotates a full 270 degrees.



Specifications

- Augers are 10" bottom, 13" vertical, 10" discharge.
- All augers have stainless steel tube and flighting.
- Maximum unloading height with standard height bodies is 20'-6"
- Overall height with standard height bodies:
- Truck mount with 40" truck frame height (body height 112") - overall height 12'-8"
- Trailer mount with 40" trailer frame height (body height 113.5") - overall height 12'-9.5"
- Delivery auger length - 15'
- Hydraulic controls for all bodies are at the left rear.
- Unloading rate up to 3500 lbs. per minute.
- Available in 16-18-24 ton models with 2, 3 or 4 compartments.

GSI InterSystems Fertilizer Solutions

FULL SITE EQUIPMENT SOLUTIONS

BEST CUSTOMIZED BLENDS. SHORTEST WAIT TIMES.

BETTER BOTTOM LINE.

Unequaled Mixing Efficiency

DUAL SHAFT HORIZONTAL BLENDER

Engineered by Scott Equipment specifically for GSI. 4- and 8-ton blenders utilize twin-shaft paddle agitators to offer a high rotation mixing action in combination with an end-to-end conveyance, resulting in shorter cycle times and better repeatability. **Cycle times are as low as 30 seconds for a 4-ton batch; as low as 45 seconds for 8-ton.**

Blended nutrients are discharged through full-width drop bottom discharge gates ("Bombay doors") which eliminate leakage and promote clean operation. An oversized intervent system allows for dust-free air exchange between the mixer and surge hopper.



NEW FERTILIZER PLOW

LIGHTER, SMALLER, MORE COST-EFFECTIVE

Save money with no loss in capacity. By maintaining an even pile peak, the new plow is 20-30% more efficient than a drag conveyor. Eliminates product pile voids between gates. Three belt-cleaning wipers eliminate waste.

New Installations:

Nearly 70% lighter than a tripper, significantly reducing the point load (an important factor for fabric buildings.) Smaller footprint requires a smaller head-house and is installed closer to a building's endwalls (more product/same space!)

Update Existing System:

Compared to a drag conveyor, this plow requires less maintenance and is less expensive. Increase your capacity within existing cavity!

BLENDING TOWERS: RELIABLE, FLEXIBLE, LONG-LASTING

In addition of up to 300 tons of storage in customizable stainless steel major and minor bins, all GSI InterSystems blending systems include: blender bypass, re-elevate, impregnation, and galvanized support structures.

TRIED & TRUE

STANDARD

SINGLE WEIGH HOPPER

Up to 18-ton capacity weigh hopper

Up to 18-ton vertical tapered auger blenders

Largest two-stage gates in the industry

2nd lane wholesale spout

FASTER BLEND & LOAD

RETAIL

DOUBLE WEIGH HOPPER HORIZONTAL BLENDER

Two 4-ton or 8-ton weigh hoppers

4-ton or 8-ton paddle high speed, high quality, high efficiency blender

8-ton or 16-ton surge hopper

2nd lane wholesale

INDUSTRY FIRST

HYBRID: RETAIL & WHOLESALE

TRIPLE WEIGH HOPPER

Three weigh hoppers:
Two 16 or 18-ton and
One 5-ton for micros

Retail and Wholesale built into one tower

Blend and Wholesale simultaneously to two lanes without sacrificing speed



ENGINEERED TO ORDER

QUOTE

Every successful project begins with an accurate quote, offering the best solutions based on your specifications.

PLAN & DESIGN

Our in-house mechanical and structural engineers design each project based on the needs of the customer and aren't limited by a catalog of equipment or a standard site layout. Regular communication with customers and contractors keeps everyone on the same page.

MANUFACTURING & DELIVERY

Our state-of-the-art facility is packed with the latest technology and automation ensuring the highest quality equipment. A dedicated Project Manager shepherds each piece through manufacturing and delivery, supporting the millwright and contractors.

INSTALLATION

Equipment is delivered to the site, tagged and staged to simplify the installation process.

COMMISSIONING

Your Project Manager is available and on-site during installation and commissioning.

SUPPORT

Once a site is up and running, our team stands ready to assist with any questions, needed parts and maintenance.



GSI InterSystems Fertilizer Solutions



More Product in Bins at No Extra Cost

The fully-enclosed load-shoe of the Open Belt Conveyor allows the tail section to be positioned outside the building. The plow can be closer to the end wall for a tighter discharge point.

Improved Access

The OBC's gravity take-up box can be positioned anywhere along the conveyor.



Cleaner Operation

Perforated and hinged floor of Enclosed Belt Conveyor eases maintenance and cleaning.

In today's rapidly changing ag market, operations with the most flexibility to adapt to end-user requirements and volatile market conditions win. The current standard isn't going to cut it for forward-thinking agricultural retail and commercial co-ops. By selecting GSI's InterSystems' brand of engineered-to-order heavy-duty fertilizer processing equipment, you're making the bold choice to go beyond what's expected. And, you're choosing to get your customers loaded and back in the field faster with the high-quality blends they demand.

Unequaled Mixing Efficiency

8-TON DUAL SHAFT HORIZONTAL BLENDER

Cycle times are shorter and blends remain consistent from batch to batch.

Strong Support

Standard elevator support tower eliminates the use of inadequate guy wires

Option Rich

Available options include: rack-and-pinion clean-out gates, magnets (receiving), shovel pockets for clean-up, and hazard-monitoring package.

Customized & Quick BLEND TOWER STRUCTURE DESIGN

GSI's patented design removes cross-bracing and promotes quick installation. The seismic and environmental variables of each site are analyzed prior to final design. Beams are hot dipped galvanized steel.

GSI InterSystems Fertilizer Solutions



3-way valves with Salem gates are connected to two 8-ton weigh hoppers. All manufactured of stainless steel. Enlarged tower footprint (20'x20') allows for ease of access at interior platforms.



From overhead bin storage, GSI's dual stage and full-open pneumatic Salem gates control the flow to two 8-ton weigh hoppers. Salem gates are constructed of stainless steel – even the interior shaft – and have 2-stage pneumatic cylinders that allow for full-open, partial-open or a quick bump for accurate measurements.



GAME CHANGER.

NEW FERTILIZER PLOW WINS WITH LIGHTER, SMALLER AND MORE COST-EFFECTIVE DESIGN.

GSI's InterSystems brand has introduced a new fertilizer plow that can replace a standard tripper, is lighter, smaller and more cost-effective with no loss in capacity. And, by maintaining an even pile peak, it is 20-30 percent more efficient than a drag conveyor by eliminating the voids in the product piles between gates.

The fertilizer plow requires a smaller building head-house, offering further savings in the construction of new processing facilities.

The plow can also offer a competitive advantage by replacing fill conveyor systems in existing fertilizer plants, as was the case at the North Central Grain Cooperative in Bisbee, North Dakota.

Joe Kremer, North Central Grain's agronomy division manager, said the plow operates at 950 tons per hour, compared to 200 tons with the plant's previous drag conveyor. "It's really fast and can handle everything we throw at it," he said. "It's been a very efficient addition to our operation." Kremer noted the facility also operates a tripper conveyor housed in a new building recently added to the plant. The plow, he said, costs about one-third of the tripper, which required a much larger space and increased the cost of the expansion project by over \$300,000.



NH3 Tanks & Wagons

Product Specs

- Custom sizes available upon request
- Standard 1-1/2" liquid withdraw valve(s)
- Standard stainless steel float gauge
- All tanks equipped with heavy-duty base legs
- 41" & 46" diameter tanks are powder coated
- 60" & 72" diameter tanks are liquid painted
- Conforms to the latest edition and addenda of the ASME code for pressure vessels, Section VIII, Division 1. Complies with ANSI K61.1-1999
- Registered with the National Board



Tanks sold in 1,000 Gal • 1,465 Gal, • 2,000 Gal. • 3,000 Gal. sizes.



TRIARCTANK
HIGH PERFORMANCE INNOVATION



Eye Wash Container

Our tanks are equipped with permanently attached stainless steel brackets to accommodate top and side mount eye wash container and safety kit (sold separately).



Grab Bars

Grab bars welded to both sides of roll guard for stability when filling tank.



Adjustable Track Wagons

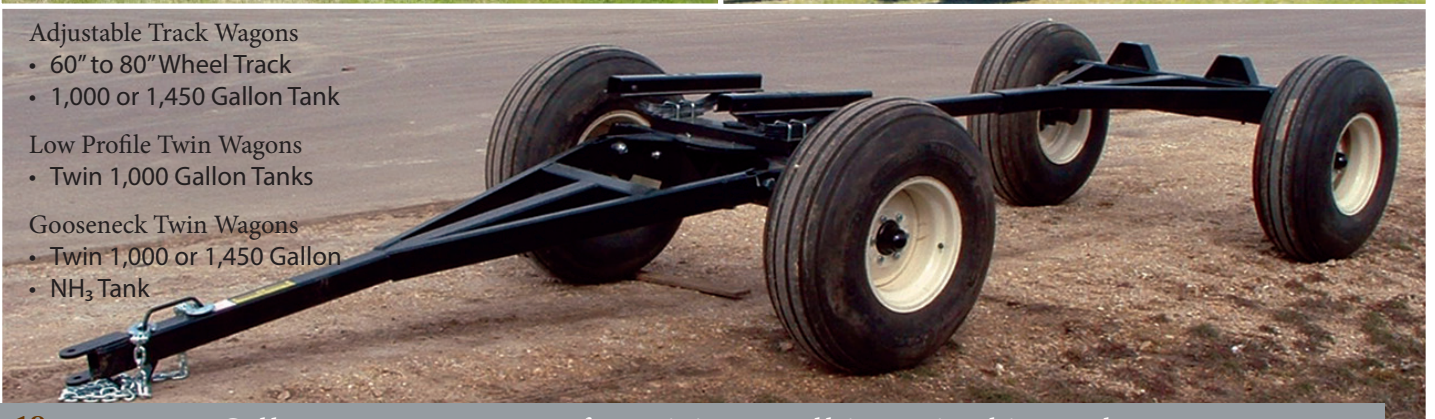
- 60" to 80" Wheel Track
- 1,000 or 1,450 Gallon Tank

Low Profile Twin Wagons

- Twin 1,000 Gallon Tanks

Gooseneck Twin Wagons

- Twin 1,000 or 1,450 Gallon
- NH₃ Tank



Dalton Ag Products - Wagons



Dalton's heavy duty running gears feature a walking tandem rear axle for smoother towing and greater stability while minimizing compaction. The gooseneck design minimized the turning radius along with spring lift assist and extendable tongue making for easier hookups. Dalton's NH3 tank wagon is also available in single axle. Models available to accommodate twin 1,000 gallon tanks up to a single 3,000 gallon tank.



WN Series Wagons

Specifications:

- Fifth wheel type reach pole trailer
- Available w/ adjustable axle or non-adj. axle
- 2" spindles on 1300 Wagon Series
- Heavy 2.5" spindles on 1600 Wagon Series
- Front & rear axles are made of 3"x5" tubing on 1300 Wagon Series
- Rear hitch & wheels: 15x10x6 - bolt are standard 16x11x8 - bolt on 1800 Wagon Series
- Front & rear axles made of 4"x6" steel tubing on 1600 Wagon Series
- Standard trailer is equipped w/ two front bolster springs and block on rear bolster
- 13' turning radius
- 17" axle clearance
- 6 leaf spring 4000#
- 100, 1,450 & 2,000 gallon models available

WNDDT Series Wagons

Specifications:

- Frame made of 6x4 rectangular tube
- Tank mounting bracket made of reinforced heavy channel
- Cross axle tube made of 6x4x3/8 rectangular tube
- Tandem walking rear axle
- Expandable metal deck
- Tread plate steps
- 8-bolt hubs & spindles
- Length = 25' including tongue
- Width = 114" with 14L Tires
- Track Width Front = 60"
- Track Width Back = 97"
- Weight with (2) 11Lx8 ply and (4) 14L x 12 ply tires less tank = 3060#

WNDDT-GN Series Wagons

Specifications:

- 60" front track
- 97" rear track on 1000 GN
- 102" rear track on 1450 GN
- 93" rear track on 2000 GN
- 93" rear track on 3000 GN
- Safety chains
- Plumbing kit
- Helper lift assist on tongue
- Fifth wheel assembly
- 425/255 tires mounted on 22.5x13.5 8-bolt wheels
- Powder coat paint

Options:

- 2-wheel brakes
- 4-wheel brakes
- 120" rear track
- 90" front & rear track
- Hose holder
- Extendable tongue

Dalton Ag Products - Spreaders

Three models to fit your operation:

- 6 Ton (220 c.f. capacity)
- 8 Ton (270 c.f. capacity)
- 10 Ton (333 c.f. capacity) **NEW**



MOBILITY 800 Row Crop Dry Fertilizer Spreader

VALUE FEATURES

- Hopper constructed of 409 stainless steel for longer life.
- VRT-ready option for precision farming operations.
- Twin PTO-driven or tractor hydraulic spinners adjust to 40', 50' or 60' spread pattern.
- Retractable roll tarp standard on all models.
- Up to 44" ground clearance under spinners, up to 37" under frame.
- 42"-46" high profile row crop wheels and tires standard – duals available on Model 1000.
- State-of-the-art powder coat white paint.
- 24-month limited warranty.



MOBILITY 600 Row Crop Dry Fertilizer Spreader



Adjustable spinners with several drive options.



Axle width adjustable up to 120".



Roll tarp with manual roll-back standard.



Optional CAT 4 Bull Pull Hitch with safety chains.

SPREADER SPECIFICATIONS

FEATURES	600	800	1000
Capacity (weight)	6 tons	8 tons	10 tons
Hopper length	108"	120"	148"
Hopper width	93"	93"	93"
Hopper capacity (volume)	220 cu. ft.	270 cu. ft.	333 cu. ft.
Overall length	203"	215"	250"
Overall height	112"	120"	120"
Overall width	132"	136"	136"
Empty weight	3,800 lbs.	4,900 lbs.	5,900 lbs.
Ground clearance	44" under spinners 36" under frame	44" under spinners 37" under frame	44" under spinner 37" under frame
Spread pattern	40', 50', 60'	40', 50', 60'	40', 50', 60'
Hopper construction	409 stainless	409 stainless	409 stainless
Spinner drive system	540 PTO Standard 540/1000 PTO Optional Tractor Hydraulic Optional	540 PTO Standard 540/1000 PTO Optional Tractor Hydraulic Optional	Tractor Hydraulic Standard
Hydraulic On/Off for ground-drive conveyor	Standard	Standard	n/a
Spinners	Dual gearbox driven	Dual gearbox driven	Dual gearbox driven
Jack	5,000 lbs.	5,000 lbs.	5,000 lbs.
Hitch	HD Clevis Standard CAT4 Bull Pull Optional	HD Clevis Standard CAT4 Bull Pull Optional	CAT4 Bull Pull
Axle	72"-120" adjustable	80"-120" adjustable	80"-120" adjustable
SRT roll tarp	Standard	Standard	Standard
Tires and wheels	320/90/R42	380/90/R46	380/90/R46 Duals Optional
Light kit	Optional	Optional	Optional
Variable rate ready	Optional	Optional	Standard
Scale kit with monitor	Optional	Optional	Optional
Paint (white)	Powder coat	Powder coat	Powder coat
Warranty	24 months	24 months	24 months

Dalton Ag Products - Spreaders



**MODELS: C220
C300
C400**

Dalton 
AG PRODUCTS

**Lime & Fertilizer
Combo Spreaders**

C-SERIES

FEATURES	C220	C300
Capacity (volume)	220. Cu. Ft.	300 Cu. Ft.
Capacity (weight)	10 Tons	12 Tons
Overall Length	239"	268"
Overall Width	102"	147.5"
Overall Height	99"	108"
Hopper Length	120"	156"
Hopper Width	93"	93"
Construction - hopper	409 SS	409 SS
Construction - frame	8X2 Rect. Tube	8X2 Rect. Tube
Metering Gate	Adjustable	Adjustable
Axle(s)	Tandem	Single
Wheels	22.5 X 13.5	28 X 30.5
Tires	Used 425/65R 22.5	850/50R30.5
Braking System	N/A	N/A
Conveyor	20" SS Mesh	20" SS Mesh
Conveyor Drive	Hydraulic	Hydraulic
Conveyor Rate	Variable	Variable
Spinners	24"	24"
Spinner Drive	Hydraulic	Hydraulic
Spread Coverage	80' Fertilizer	80' Fertilizer
Control System	Raven	Raven
Tongue/Hitch	Adj. Clevis or Pintle	Adj. Clevis or Pintle
Jack	12K	12K
Tractor Hydraulic System Req.	28 GPM	28 GPM
Lighting	Optional	Optional
Scale System	Optional	Optional
Roll Tarp	Optional	Optional
Standard Colors	White	White





Precision Tank

Precision Tank offers the industry's broadest line of storage and field-use tanks. Our team of welders and construction technicians take pride in their workmanship. Tanks are welded externally and internally, so you see the quality in every weld.

Fiberglass Tanks - Features & Options

- Fiberglass tanks are designed to eliminate the effects of fertilizer & chemical corrosion, providing long-term performance. All Precision fiberglass tanks come with a 3-year warranty.
- Isophthalic polyester resin is used throughout our standard tanks. Vinyl ester resin is also offered, for harsh environmental storage installations.
- The final gel coat exterior has the best resistance to ultraviolet light, and will last the entire tank life – no more repainting like mild steel tanks.
- 24" manhole and cover is standard on all tanks.
- 3" or 4" outlets and vents are available, depending on tank size and customer requirements.
- Fiberglass tanks are 60% lighter and have a higher strength-to-weight ratio than steel tanks.

Tank Sizes Available

15,000 gallons
20,000 gallons
25,000 gallons
30,000 gallons



- Bulk Chemical Storage Tanks.
- N-Serve Bulk Chemical Storage Tanks.
- Stainless Steel Nurse Tanks.
- Vertical Mild Steel Storage Tanks.
- Vertical Mild Steel Cone Bottom Tanks.
- Mini Bulk Chemical Tanks.
- Mini Bulk N-Serve Tanks.

Standard-Nurse

- Sump with 2" outlet
- 48" V sump w/ 2" outlet
- Tank Baffle
- 1.5"-2" stainless sparger pipe
- Mild steel banded skid
- Mild steel weld-on skid
- Stainless steel weld-on skid
- Box Sump with 2" or 3" outlet
- 36" or 96" or 144" V Sump w/ 3" outlet



Bulk Chemical Vertical Cone

The vertical storage tanks are available in either a flat bottom (FB) or a cone bottom (CB). Chemical storage tanks are also available in horizontal (HZ) designs.

All chemical storage tanks are constructed of type 304 stainless steel with a #4 finish, and manufactured with openings and fittings as specified by the customer.

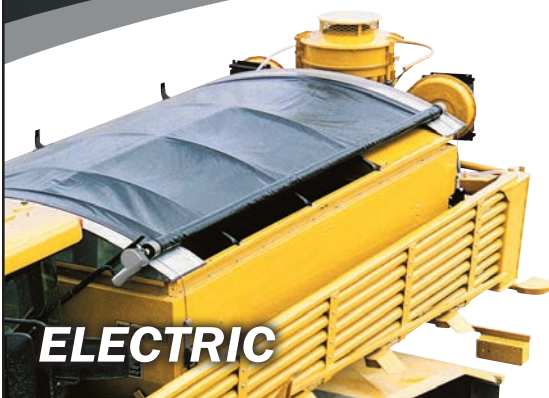
Agri-Cover



AGRI-COVER® TARPS MADE TO LAST!

SRT-2™ Spool Roll Tarp

The SRT-2 is the original Spool Roll Tarp system and is highly recommended in the fertilizer industry for boxes under 24'. The unique constant tension system allows you to safely roll it in windy conditions. As a manual tarp, the flex drive and telescoping handle allows the operator to roll the tarp open or closed from a stationary position. Add the electric option now to give your operators safety and efficiency. Available in GV and Aluminum for non-fertilizer applications.



ELECTRIC



MANUAL

EZ-LOC® Roll-Tarp System

EZ-LOC Stainless Roll Tarp is available on boxes up to 53' and gives you some options the competition does not offer; 14" deep caps for more tarp coverage on top, no weld end caps, tarp attached to roll tube with rope in channel for tighter fit, and lots of stainless steel components to stand the test of time. Add the electric option now for safer and more efficient operation.



ELECTRIC



MANUAL

AUTOLOCK™

The AutoLock Dual Drive tarp system is a premium electric tarp with a 3" extruded aluminum roll tube that helps roll the tarp in windy conditions. The Dual Tension System mounted to the side of the box keeps constant tension during all points of travel and leaves the back of the trailer open for a rear discharge unit on tender trailers. Stainless Steel end caps are optional.



Tarp, meet motor. Convert your side locking semi tarp system into electric with the Roltec™ Electric Tarp Conversion. This system makes tarping easy, saves time & money and is safer to operate. The all-new Roltec™ system is expertly engineered to keep your tarp rolling with ease from the comfort of your cab.

ROLTEC™ Electric Tarp Conversion



Case IH Nutri-Placer 930 Pull-Type Applicator



NUTRI-PLACER 930 PULL-TYPE FERTILIZER

Available on a rugged 4-by-6-foot frame and in five widths ranging from 27.5 to 47.5 feet, the Nutri-Placer 930 has proven ground-engaging components for optimal anhydrous ammonia placement. From the hydraulic single-point depth control to double fold wing cylinders and radial tires, the Nutri-Placer 930 easily moves from field to field, helping you cover more acres efficiently.

NUTRI-PLACER		930 SERIES			
MODEL	27.5 FT. (8.4 M)	32.5 FT. (9.9 M)	37.5 FT. (11.4 M)	42.5 FT (12.2 M)	47.5 FT (14.5 M)
Frame Style	Pull-type				
Row Spacing (Shank)	15 in., 20 in., or 30 in.				
Row Spacing (HSLD)	30 in. (76 cm)				
Main Frame & Wing Tubing	4 in. x 6 in. double-rank (10 cm x 15 cm)				
Pull Frame	A-Frame 4 in. x 10 in. tubes (10.1 cm x 25.4 cm)				
Fold Type	Single fold		Double fold		
Transport Height	10 ft. 6 in. (3.2 m)	12 ft. 4 in. (3.7 m)	13 ft. 10 in. (4.2 m)	13 ft. 6 in. (4.1 m)	
Transport Width	16 ft. 10 in. (5.1 m)			18 ft. 6 in. (5.6 m)	
Main Transport Wheels (Shank)	Standard single – 12.5L x 15 FI (8-bolt); Optional single – 320/70R15 radial (8-bolt); Optional walking tandem – 11L x 15 FI (6-bolt); Optional walking tandem – 280/70R15 (6-bolt)			Standard single – 340/60R16.5 (8-bolt); Optional walking tandem – 12.5L x 15FI (8-bolt); Optional walking tandem – 320/70R15 radial (8-bolt)	Standard walking tandem – 12.5L x 15FI (8-bolt); Optional walking tandem – 320/70R15 radial (8-bolt)
Wing Wheels (Shank)	Standard Single – 9.5L x 15 FI (6 bolt); Optional single – 320/70R15 radial (8-bolt) Optional walking tandem – 9.5L x 15 FI (6-bolt); Optional walking tandem – 280/70R15 (6-bolt)			Standard single – 280/70R15 radial (6-bolt); Optional walking tandem – 9.5L x 15 FI (6-bolt); Optional walking tandem – 280/70R15 radial (6-bolt)	Standard walking tandem – 9.5L x 15 FI (6-bolt); Optional walking tandem – 280/70R15 radial (6-bolt)
Main Transport Wheels (HSLD)	Standard single 320/70R15 radial (8-bolt); Optional walking tandem 280/70R15 radial (6-bolt)			Standard Walking Tandem 320/70R15 Radial (6-bolt)	
Wing Wheels (HSLD)	Standard single 280/70R15 radial (6-bolt); Optional walking tandem 280/70R15 radial (6-bolt)			Standard Walking Tandem 280/70R15 Radial (6-bolt)	
Outer Gauge Wheel	None				Pin Adjust Qty. 2 – 9.5L x 15 stubble-resistant FI tires
Hitch	Category 3 clevis		Category 3 clevis (opt. cat. 4)	Category 4 clevis (opt. cat. 5)	
Wing Flex	3 Section flex (7° Down & 16° Up)				
Engine HP Requirement (Shank)	165 – 220 HP	195 – 260 HP	225 – 300 HP	255 – 340 HP	285 – 380 HP
Engine HP Requirement (HSLD)	220 – 275 HP	260 – 325 HP	300 – 375 HP	340 – 425 HP	380 – 475 HP
Operating Speed (Shank)	5 – 7 mph (8.0 – 11.3 kph)				
Operating Speed (HSLD)	6 – 11 mph (9.7 – 17.7 kph)				
Depth Adjustment	Single-point hydraulic				
Wheel Pivot Lubrication	Composite self-lubricating bushing				
Hinge Lubrication	Composite self-lubricating bushing				
Shank Options	Rigid Mtd., HD Spring Mtd., Rigid CS, HD Spring CS, or High Clearance Shank (HCS)				
Coulter Options (Shank)	20 in. (51 cm) coulters, 24 in. (61 cm) coulters				
Sealer Options (Shank)	14 in. (36 cm) spring double disk, 18 in. (46 cm) spring double disk-notched, 18 in. (46 cm) spring double disk–dull				
Rear Hitch:	Optional constant level rear hitch 25,000 lb. (11 340 kg) towing capacity				
HSLD Row Unit	22.6-inch (57.4 cm) coulter, 4-degree blade angle; Cast-iron knife with carbide inserts; Walking tandem closing system with SharkTooth blade and press wheel				
Weight (Shank)	10,200 lb. (4627 kg)	11,200 lb. (5080 kg)	14,200 lb. (6441 kg)	15,200 lb. (6895 kg)	16,600 lb. (7530 kg)
Weight (HSLD)	10,500 lb. (4763 kg)	12,500 lb. (5670 kg)	14,500 lb. (6577 kg)	15,500 lb. (7031 kg)	17,000 lb. (7711 kg)

Case IH Nutri-Placer 940 Pull-Type Applicator



NUTRI-PLACER 940 PULL-TYPE FERTILIZER

The Nutri-Placer 940 allows you to take control of your nitrogen application. These tough, durable applicators offer commercial quality 6-by-6-inch frames available in five widths ranging from 50 to 65 feet. Single-point depth control and a constant level rear hitch provide safe, reliable hook-up. You also get to choose from a variety of agronomically designed coulters or shank and sealer options to deliver uniform depth and sealing.

NUTRI-PLACER	940 SERIES		
MODEL	50 FT. (15.2 M)	60 FT. (18.3 M)	65 FT. (19.8 M)
Frame Style	Pull-type		
Row Spacing (Shank)	15 in. (938 cm) or 30 in. (76 cm)		
Row Spacing (HSLD)	30 in. (76 cm)		
Main Frame & Wing Tubing	6 in. x 6 in. triple-rank (15 cm x 15 cm)		
Pull Frame	T-Bone 6 in. x 10 in. tubes (15.24 cm x 25.4 cm)		
Fold Type	5 Section fold, 3 section flex	7 Section fold, 5 section flex	7 Section fold, 5 section flex
Transport Height	13 ft. 9 in. (4.2 m)		
Transport Width	18 ft. 9 in. (5.7 m)		
Main Transport Wheels (Shank)	Standard walking tandem – 16.1L x 16.1F1 (8-bolt); Optional walking tandem – 440/55R18 radial (8-bolt)		
Wing Wheels (Shank)	Standard walking tandem – 12.5L x 15F1 (6-bolt); Optional walking tandem – 320/70R15 radial (6-bolt)		
Main Transport Wheels (HSLD)	Standard walking tandem – 440/55R18 radial (8-bolt)		
Wing Wheels (HSLD)	Standard walking tandem – 320/70R15 radial (6-bolt)		
Wing Gauge Wheel (Shank)	None	Pin adjust	
Wing Gauge Wheel (HSLD)	None	Pin adjust 20.5 – 8 load range D (inner & outer wings)	
Hitch	Category IV/V		Category IV/V
Wing Flex	5 Section flex (inner wings – 20 degrees up & 9 degrees down; outer wings – 7 degrees up and down)		
Engine HP Requirement (Shank)	300 – 460 HP	360 – 550 HP	390 – 598 HP
Engine HP Requirement (HSLD)	315 – 500 HP	375 – 600 HP	405 – 650 HP
Operating Speed (Shank)	5 – 8 mph (8.0 – 12.9 kph)		
Operating Speed (HSLD)	6 – 11 mph (9.7 – 17.7 kph)		
Depth Adjustment	Single-point hydraulic		
Wheel Pivot Lubrication	Composite self-lubricating bushing		
Hinge Lubrication	Composite self-lubricating bushing		
Coulter Options	24 in. (61 cm) coulters		
Shank Options	HD Spring Mounted or High Clearance Shank (HCS)		
HSLD Row Unit	22.6-inch (57.4 cm) coulter; 4-degree blade angle; Cast-iron knife with carbide inserts; Walking tandem closing system with SharkTooth blade and press wheel		
Sealer Options	18 in. (46 cm) Spring double disk-notched, 18 in. (46 cm) Spring double disk-dull		
Weight (Shank)	21,150 lb. (9,752 kg)	22,500 lb. (10,206 kg)	23,000 lb. (10,433 kg)
Weight (HSLD)	23,600 lb. (10,705 kg)	26,800 lb. (12,156 kg)	28,000 lb. (12,700 kg)
Rear Hitch	Optional constant level rear hitch 25,000 lb. (11,340 kg) towing capacity		

Case IH HSLD Pull-Type Applicator



NUTRI-PLACER

HIGH-SPEED LOW DISTURBANCE (HSLD) COULTER
SPECIFICATIONS



WHERE PRODUCTIVITY MEETS PERFORMANCE.

- The Nutri-Placer HSLD places nutrients up to 6 inches deep in the root zone—when and where crops need it most
- New 22.6-inch single coulter cuts through residue with minimal soil disturbance for improved nutrient retention
- Industry's highest speed capability provides increased acres per hour, lower tractor hours and reduced fuel consumption
- Cast-iron components and reduced maintenance keep you in the field.

CREATE THE PERFECT FIELD FINISH.

- Cuts through heavy residue without plugging — even at high speeds and in tough, fast-changing conditions
- In Case IH field testing, the Nutri-Placer HSLD provided better residue cover, significantly fewer clods and reduced lateral soil movement compared with competitive coulter-style applicators
- Uniform surface finish preserves valuable ground cover in highly erodible land and heavy, no-till corn conditions
- Improves soil and moisture retention to reduce run-off and maximize crop uptake

LOW SOIL DISTURBANCE.

- Preserves valuable ground cover in highly erodible land and heavy, no-till corn conditions
- Provides the opportunity for fall, preplant or earlier side-dress applications
- In Case IH field tests, preserved greater amounts of residue, reduced lateral soil movement and produced smaller berms compared with the leading coulter-style applicator competition
- Superior field finish increases nutrient uptake, minimizes runoff and delivers higher returns

Available in:

11 | 13 | 15 | 17 | 19 | 20 | 24 | 26

row pull-type applicators.

Case IH Pull-Type Applicator

MAXIMUM PRODUCTIVITY, MINIMAL SOIL DISTURBANCE.

Capable of speeds up to 11 mph, the Nutri-Placer 930 fertilizer applicator with new High-speed Low Disturbance (HSLD) coulters helps you cover acres fast and efficiently. And this increased productivity is matched with superior agronomic performance. In field testing, the HSLD coulters provided better residue cover and a more level surface finish than other coulters-style applicators available — properly sealing nutrients to lock in each crop's profit potential.



SINGLE-DISK COULTER DESIGN

- Places nitrogen in the root zone — up to 6 inches deep — when and where crops need it the most
- Cuts through heavy crop residue without plugging — even at high speeds

HIGH SPEED, GREATER PRODUCTIVITY

- Increases your acres per hour and return on investment:
 - Case IH recommended max. speed — 11 mph:
 - 15-coulters opener HSLD covers 42.5 acres per hour

LOW SOIL DISTURBANCE

- Preserves valuable ground cover in highly erodible land and heavy, no-till corn conditions
- Provides the opportunity for fall, preplant and earlier side-dress applications
- In Case IH field tests, preserved greater amounts of residue, reduced lateral soil movement and produced smaller berms compared with the leading coulters-style applicator competition
- Superior field finish increases nutrient uptake, minimizes runoff and delivers higher returns

RIGHT PLACE, RIGHT TIME

- Proud partner of the 4R Nutrient Stewardship initiative
- Promotes best management practices to achieve cropping system goals while minimizing field-nutrient loss and maximizing crop uptake
- The Nutri-Placer 930 HSLD embodies the 4R approach to nutrient stewardship by:
 - Applying the right fertilizer source

BUILT FOR HIGH-EFFICIENCY FARMING.

The Nutri-Placer 930 HSLD row unit features the durability, productivity and agronomic performance you can depend on to make the most of every acre, every application.



ADDITIONAL FEATURES

- 1 Radial tires: handle higher loads and float over rough terrain with reduced compaction
- 2 LED lighting: provides bright, reliable and safe transport
- 3 Weight kits: available to help customize the toolbar to your individual field conditions (optional)



Case IH Pull-Type Applicator



NUTRI-TILLER 955 & 5310

STRIP-TILL APPLICATORS



CONFIGURATION	8-ROW	12-ROW	16-ROW	24-ROW
SPECIFICATIONS				
Frame Style	Pull-type			
Working Width [30 in. (76 cm) centers]	20 ft. (6.1 m)	30 ft. (9.1 m)	40 ft. (12.2 m)	60 ft. (18.3 m)
Main Frame and Wing Tubing	4 in. x 6 in. (102 mm x 152 mm) double-rank			6 in. x 6 in. (152 mm x 152 mm) triple-rank
Pull Frame	A-frame 4 in. x 10 in. (102 mm x 254 mm) tubes			"T-Bone" pull hitch, 6 in. x 10 in. x 1/2 in. (152 mm x 254 mm x 13 mm) wall
Fold Type	Single fold		Double fold	Triple fold (fold forward outer wings)
Transport Height	8 ft. 6 in. (2.6 m)	13 ft. 6 in. (4.1 m)		13 ft. 9 in. (4.2 m)
Transport Width	18 ft. 6 in. (5.6 m)	19 ft. 8 in. (6 m)	19 ft. 8 in. (6 m)	18 ft. 9 in. (5.7 m)
Standard Tire Size	Main frame - walking tandem 12.5 L x 15 L IF tires (8-bolt hubs)	Main frame - walking tandem 12.5 L x 15 L IF tires (8-bolt hubs) Wing frame - walking tandem 9.5 L x 15 L IF tires (6-bolt hubs)		Main frame - walking tandem 16.5 L x 16.1 L IF tires (8-bolt hubs) wing frame - walking tandem 12.5 L x 15 L IF tires (6-bolt hubs)
Stubble-Resistant Tires	Main frame - walking tandem IF320/70R15	Main frame - walking tandem IF320/70R15 (8-bolt hubs) Wing Frame - walking tandem IF280/70R15 (6-bolt hubs)		Main frame - walking tandem 440/55R18 (8-bolt hubs) Wing Frame - walking tandem IF320/70R15 (6-bolt hubs)
Hitch	Category 3 clevis	Category 4 clevis		Category 5 clevis
Wing Flex	Rigid	3-section flex (7° down and 16° up)		5-section flex (inner - 9° down 20° up; outer - 7° down, 7° up)
Operating Speed	5 - 7 mph (8 - 11.3 kph)			
HP Requirement	150 - 200 engine HP	225 - 300 engine HP	300 - 400 engine HP	450 - 620 engine HP
Shanks	HCS ST spring reset [adjustable 850 lbs. (386 kg) or 1,250 lbs. (567 kg)]	HCS ST spring reset [adjustable 850 lbs. (386 kg) or 1,250 lbs. (567 kg)]		HCS ST spring reset [adjustable 850 lbs. (386 kg) or 1,250 lbs. (567 kg)]
Depth Adjustment	Single-point hydraulic			
Hinge Lubrication	Composite self-lubricating bushing			
Rear Hitch	Optional constant level rear hitch 25,000 lbs. (11 340 kg) towing capacity			
Options	24 in. (610 mm) coulters			
	HCS ST mount row cleaners with adjustable down pressure			
	18 in. (457 mm) berm builders for HCS ST shank			
	N/A	Dry fertilizer air packages		N/A
	Rear NH3 mounting bracket kit			
	Concave or flat 14 in. (356 mm) berm conditioner baskets			

Case IH Pull-Type Applicator



NUTRI-PLACER 920 PULL-TYPE LIQUID FERTILIZER APPLICATOR

Features

- 23 or 25 rows for big productivity and to match 24-row planters
- Outer wings can be folded to 15 coulters to match 16-row planters
- High Capacity Jack Stand w/ 10' x 10' footprint
- Narrow Hitch for tight turning radius
- X-Wing Frame Fold for narrow transport width and low transport height
- Forward mounted applicator frame for easy viewing of applicator
- 5 section boom application capable
- Applicator frame mounted to parallel arms for level lifting and lowering for better fertilizer placement
- 5 section flex with active down pressure for better fertilizer placement
- Greaseless poly bushings in wing pivots for low maintenance
- Frame strength and smooth gusseting for stress relief and long toolbar life
- 3" Tank Fill easy to reach and away from any electronics
- 1650 gallon tank for more time in the field and less time filling
- Low center of gravity tank for more stability
- Front and Rear tank level sight gauge
- Wash tank conveniently mounted near product fill area.
- Hydraulic drive pump for better rate control and easier rate adjustment
- Mount provided for section and rate control valves
- High Capacity 420/80R46 tires for larger footprint and less compaction



NUTRI-PLACER 920 PULL-TYPE APPLICATOR	
Frame Style	Pull-Type
Row Spacing	30 in. (76 cm)
Number of Coulters	23 or 25
Tank Capacity	1,650 gal. (6 246 L) poly tank
Fold Type	Hydraulic X-Fold
Transport Height	13 ft. 4 in. (4.1 m)
Transport Width	16 ft. 8 in. (5.1 m)
Wing Flex	5 section (inner wing - 7 degrees up/7 degrees down; outer wings - 7 degrees up/7 degrees down)
Tire Size	Singles Qty. 2 - 420/80R46 w/ 10-bolt hub
Wheel Spacing	120 in. (3 m)
Gauge Wheels	Qty. 4 - 20.5 x 8 pin adjust
Hitch	Category 4 clevis
Pull-Frame Tubing	Double 4 in. x 8 in.
Coulter Frame Tubing	Dual rank mainframe 4 in. x 7 in. tubing - center 19 rows; Single 4 in. x 6 in. tube - remaining rows
Crop Clearance to Tank Frame	33 in.
Crop Clearance to Toolbar Frame	24 in.
Row Unit	Coulters w/ Injectors or Knives
Wash Tank Capacity	7 gal.
Weight Empty	16,390 lbs.
Tongue Weight	6,310 lbs.
Minimum Hp Requirement	240 Engine hp
Options	Hydraulic driven pump



Case IH NPX2800

The NPX2800 allows you to apply the right amount of fertilizer at the right time and at the right soil location to maximize fertilizer utilization and yields.

The NPX2800 can accommodate 30, 36, 38 and 40 in. row spacings. An adjustable axle allows for 62, 72, 76 and 80 in. spacings or an optional fixed axle can be chosen for 120 in. spacing. The optional ground drive includes a 7.0 – 14 Dyna-Trak bar lug tire for improved traction, spring cushioning to protect the pump, a stainless- steel drive chain and an optional one- or two-piston John Blue pump.

For better visibility, the coulter bar and ground drive system are mounted in front of the tank. The parallel linkage system raises and lowers the coulter bar while the tank remains stationary. The coulter assembly stays perpendicular when the bar is raised; no individual coulter depth adjustment is needed. The tank is mounted lengthwise for improved visibility during transport.

The NPX2800 is designed to maintain constant tongue weight whether the tank is loaded or empty, and the pressure gauge is easily visible from the tractor seat. Choose a tank capacity of either 500, 850 or 1,000 gallons to best fit your operation.

The NPX2800 1300 gallon unit sidedresses liquid fertilizer faster with a wider application width and a larger volume capacity. This unit features three working widths and can accommodate a wide variety of row spacings. The coulter bar and ground drive are mounted in front of the tank for excellent visibility, and the active hydraulic system maintains down force to keep coulters at the desired operating depth across the full width of the applicator – a key advantage over other competitive models.

The parallel linkage system raises and lowers the coulter bar while the tank remains stationary, and the wings raise slightly when making end-row turns for additional clearance.

The unit converts from 15 coulters for 16, 30 in. rows to 11 coulters for 12, 30 in. rows (and the 14 in. of space to the bottom of the coulter allows for greater crop clearance). The NPX2800 1300 gallon unit is designed to maintain constant and consistent tongue weight whether the tank is loaded or empty, and the pressure gauge is easily visible from the tractor seat.

The 4 x 8 in. frame and hitch tubing combined with two ranks of 4 x 6 in. tubing with diagonal bracing add strength and durability to the toolbar.

In addition, pin adjust gauge wheels allow for quick and easy wing depth adjustment to match the center section operating depth. Large 420/80 R46 tires provide extra flotation, and the low (101 in.) and narrow (85 in.) tank provides for an optimal center of gravity and better rearward visibility for the operator. The solid formed steel sheet the tank rests on also distributes stress loads more evenly.



The NPX2800 provides the most advanced root zone banding technology available in the market.

Case IH NPX2800



The NPX2800 1,300-gallon unit follows ground contours up to 6° down and 30° up, providing for extra clearance on turns and flexibility when operating in the field. The Active Hydraulic System™ provides 1000 lbs. of hydraulic pressure on the wing-fold cylinders to force coulters into the soil, and the pressure reducing/relieving valve maintains down pressure while allowing the wings to follow the contours.



- Sidedress up to 16 30" rows.
- Capable of accommodating multiple row spacings.
- 500, 850, 1,000, or 1,300-gallon tanks.
- Liquid coulters assemblies available with either knife or injector.
- Flashing and warning tail lamps standard.
- Folds for easy transport.
- Constant tongue weight, whether loaded or unloaded for better stability.
- Front hose stand keeps hoses and wires away from tractor hitch.
- All models accommodate 30", 36", 38" and 40" row spacing.
- Parallel linkage system raises and lowers the coulters bar while the tank remains stationary.

Nutri-Placer 2800 Sidedress Applicator Specifications

MODELS	500 or 850 GALLON	1,300 GALLON
Tank capacity	500 or 850 gallons (1893 or 3218 L)	1,300 gallons (4921 L)
Coulters	7, 9, or 11 at 30 in. (76 cm) spacing	11, 13, or 15 at 30 in. (76 cm) spacing
Working widths	17 ft. 6 in. – 27 ft. 6 in. (5.3 – 8.4 m)	27 ft. 6 in. – 37 ft. 6 in. (8.4 – 11.4 m)
Transport dimensions	12 ft. 4 in. (3.8 m) width x 9 ft. 8 in. (3.0 m) height – max.	12 ft. 6 in. (3.8 m) width x 13 ft. (4.0 m) height
Tire size	8-bolt hub with 14Lx16.1 12PR	10-bolt hub with 420/80R46
Wheel spacing	Adjustable: 62, 72, 76, and 80 in. (157, 183, 193, and 203 cm) Fixed: 120 in. (305 cm)	Adjustable: 120, 144, and 156 in. (305, 366, and 396 cm)
Gauge wheels	NA	Pin adjust
Frame tubing	4 x 4 in. (10 x 10 cm)	4 x 8 in. (10 x 20 cm) frame & hitch; 4 x 6 in. (10 x 15 cm) toolbar
Constant-balance tongue weight	< 1,000 lb. (454 kg) with 7 coulters, < 1,200 lb. (544 kg) with 11 coulters	< 2,500 lb. (1134 kg) with 15 coulters
Clevis	Combination single or double	Combination single or double
Ground drive	Dyna-Trak tire; stainless-steel drive chain; John Blue 1- or 2-piston pump	Dyna-Trak tire; stainless-steel drive chain; John Blue 2-piston pump
Flashing & warning tail lamps	Standard	Standard
Wash tank	NA	Standard
Wing-fold hydraulics	Standard	Standard
Active hydraulics	NA	Standard

Hiniker Nitro-Lert & Bull-Pull Hitch



NITRO-LERT™

**ANHYDROUS AMMONIA
KNIFE MONITOR**

NITRO-LERT ALERTS THE OPERATOR:

- When a knife is plugged or partially blocked.
- When a manifold outlet is plugged or partially blocked.

INDEPENDENT FREE-STANDING SYSTEM

- In-cab bar graph display constantly monitors each manifold outlet.
- Audible alarm alerts operator of malfunction.
- User-friendly interface.

Call to order your Nitro-Lert today!



The vital union of your tractor and implement gets the attention it deserves.

- Eliminates backlash for precise control.
No more jarring implement slams means less wear and tear on your tractor and yourself.
- Heavy duty for heavy loads.
High-strength austempered ductile iron with heat-treated steel for superior wear, strength and durability.
- Easy installation.
A variety of implement mountings available for direct replacements of standard pintle hitches.
- Increase the life of drawbars.
Articulating joint reduces drawbar and drawpin wear.
- Superior construction means more pulls for your money.
The heat-treated grease-able ball joint works hard and lasts long.
- Precision hitch allows for more control.
Allows for more control, especially with GPS navigation.

**Black Ace has
developed a better
implement receiver
hitch!**



Kestrel Weather Meters

FEATURES

- Data hold function
- Large easy-to-read display
- Waterproof and floats
- Quick-response, external thermometer
- Innovative design for stability and accuracy in abrupt condition changes
- Patented, user-replaceable impeller (no tools needed)
- Ultralight impeller is mounted in jewel bearings for precision, wide range of speeds and low startup speed
- Impeller is shock-mounted in a glass-reinforced plastic housing
- All instruments and accessories are completely assembled in the USA

The Kestrel 2000 also includes:

- A slip-on protective cover or soft carry pouch
- Neck lanyard
- Five Year Warranty
- User-replaceable CR2032 coin cell battery with average life of 300 hours or 2 AAA batteries with average life of 400 hours
- Kestrel Certificate of Conformity



Replacement
Impellers available.



	1000	2000	3000	4000
Part No.	K0800	K0803	K0808	K0840
Price	\$85.71	\$110.00	\$171.43	\$291.43
Current Wind Speed	X	X	X	X
Maximum Wind Gust	X	X	X	X
Average Wind Speed	X	X	X	X
Current Air Flow				
Temperature		X	X	X
Wind Chill		X	X	X
Relative Humidity			X	X
Heat Stress Index			X	X
Dewpoint Temp			X	X
Barometric Pressure				X
Altitude				X
Wet Bulb Temp				X
Density Altitude				X
Backlit Display		X	X	X
Waterproof & Floats	X	X	X	X
Hard Cover	X	X	X	Optional
Clock				X
Computer Interface				Optional
Pressure Trend				X
Data Storage				X
Two Year Warranty	X	X	X	X



Raven VSN Steering

VSN™ VISUAL GUIDANCE

The latest technology advancement from Raven, VSN™ transforms machine guidance through emerged crops. This patent-pending innovation utilizes a non-contact stereo vision camera to navigate crop rows, allowing the operator to focus on all other aspects of effective application control. Minimizing crop damage, covering more acres in a day and essentially providing an easier machine operation leads to a quick return on investment to maximize yield profitability.

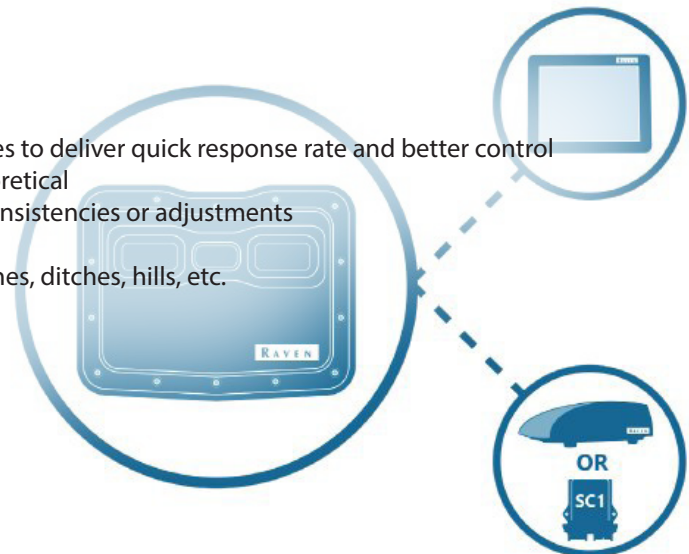
How VSN Enhances Your Operation

- Reduces operator fatigue
- Enhanced steering control and simple operation results in minimal crop damage and more acres covered in each day
- Operates at high speeds, exceeding 20 mph
- Operates in challenging terrains, with demonstrated success in areas exceeding eight degrees of slope
- Maintains row guidance in crops from less than four inches to nearly full canopy
- Quick, one-time calibration with up to five saved profiles for easy crop transitions
- Proven in corn, soybeans



Features & Benefits

- Enhanced machine control for sprayer efficacy
- Reduces operator fatigue and crop damage
- Uses state-of-the-art image sensor and processing technologies to deliver quick response rate and better control
- Tracks machine paths accurately to the actual planting vs. theoretical
- Allows machine ability to automatically adjust to planting inconsistencies or adjustments
- Enables faster vehicle speed
- Works in areas of limited GPS/GNSS coverage — next to tree lines, ditches, hills, etc.
- Live video row overlays in CRX and ROS platforms
- In-field calibration
- ISO UT user interface, custom control widgets
- Slingshot® telematics and OTA software update support
- Pair with Viper® 4+ and RS1™ or SC1™ guidance



Raven Viper 4+



VIPER® 4+

Viper® 4+ integrates with Raven's full line of products into one networked platform that offers a capacitive touchscreen and an intuitive, tablet-style interface with swiping features and horizontal or vertical orientation. Customize your Viper 4+ by user and machine - it's color blind which means it works with equipment of every brand. Easy job set-up, fewer touches, and greater efficiency allow for extraordinary data management capabilities.

What's New:

- Faster boot-up time - approximately 30 seconds
- Capacitive touchscreen - versus a resistive screen
- Screen up to 3 times brighter with improved peripheral viewing
- Ignition switch start-up and boot-down
- Built-in-self-test capabilities to help identify software or hardware issues with the unit itself

RAVEN OPERATING SOFTWARE (ROS)

Raven Operating Software (ROS) gives operators the ability to customize screen layouts to fit your application and other user preferences. Grower, farm, and field file structures help ensure you get the data you need in an organized and meaningful manner. Machine and product profiles offer even further customizing, making the Viper 4+ the perfect match for each unique operation and user.

SLINGSHOT® READY

Powered by Raven Operating Software and a high-speed processor, Viper 4+ harnesses the power of Slingshot for outstanding data management functionality and the ability to wirelessly update your field computer software. You get powerful tools for gathering, tracking and reporting. Getting the data you need, organizing it and turning it into meaningful information is faster and easier. And Slingshot gives you access to live remote support from Raven's team of experts.



RAVEN



Raven CR7 & SlingShot

The latest innovation from Raven is the CR7 - a 7" lightweight, scalable field computer with a simplified widget concept. The CR7 contains ISO VT and Task Controller capabilities, making this mighty unit a plug-and-play option for building an affordable system. Pair the CR7 with a compatible GPS receiver and antenna to get all the benefits of Slingshot® file transfer and remote support, autosteer and guidance, AccuBoom™, Raven serial consoles, and sub-meter single frequency GPS and GLONASS.

Features & Benefits

- Simplified, customized widget layout
- Ability to access settings page from inside a job
- Map-based navigation
- Auto field boundaries keep you organized automatically
- Interactive field/job list and map view
- Slingshot-ready for file transfer, remote support, and OTA software updates
- Compatible w/ Raven AccuBoom, serial SCS consoles, & external lightbar support
- ISO Universal Terminal and Task Controller functionality via unlock
- Straight A-B, A plus heading, pivot, contour, and last pass guidance
- Compatible with autosteer products including SmarTrax and SmarTrax MD
- Sub-meter single frequency GPS and GLONASS (optional external)
- Scalable GPS (optional external)
- SLINGSHOT® READY

CR7



CR7 harnesses the power of Slingshot for outstanding data management functionality giving you powerful tools for gathering, tracking and reporting. Getting the data you need, organizing it and turning it into meaningful information is faster and easier. And Slingshot gives you access to live remote support from Raven's team of experts.

UTILIZE CR7 WITH THESE ENHANCEMENTS

SmarTrax™ MD | SmarTrax™ & SmarTrax™ RTK | AccuBoom™
Slingshot® file transfer and remote support | Raven ISO Product Control

R A V E N

The Slingshot platform is the backbone of our efficiency-enhancing portfolio. Combining our software capabilities and high-quality hardware allows us to create a Connected Workflow™ that syncs operations from the office to the field. And, that gives you the ability to see your business differently and find new ways to run it even better than before.

Ag retailers are finding 20% efficiencies gained when they use the Slingshot platform with Raven's solutions in the cab. The ability to connect the office to the field while monitoring the support equipment required to bring that system together is paying dividends. Everything across the operation runs more smoothly by using technology to increase effectiveness and reduce variability across day-to-day activities.

No longer do you have to wonder about the key variables impacting your performance such as work time, idle time and transit time. With Raven's integrated system, you can quickly analyze and address these figures and manage your fleet and business in real-time.



Raven Rate Control Module

RAVEN RATE CONTROL MODULE (RCM)

The RCM uses Raven's innovative control algorithms to make it the most precise application controller on the market today. It fits a variety of applications—up to five product liquid and granular control, NH₃ (including AccuFlow™ HP+), air cart and generic applicators. Sixteen-section control eliminates expensive skips and overlaps for all phases of your operation, from spraying to NH₃, and fertilizer application to planting.

The RCM is incredibly user friendly. We've simplified the setup, introduced integrated help content, and added advanced diagnostic information to quickly identify issues and reduce costly downtime. Customized user interfaces give the operator the flexibility to see and control what fits their needs, and configurable machine profiles allow the RCM to easily move between machines and implements without re-setting machine configurations. The RCM is compatible with many ISOBUS virtual terminals on the market, including the Viper® 4 and Viper® 4+ and CR7 from Raven.

The Raven Rate Control Module is AEF Certified

- Designed to ensure compatibility between ISOBUS products from different manufacturers
- Proves that a specific product complies to ISO 11783 and the additional AEF Guidelines

Features & Benefits

- Liquid, NH₃ and dry applications
- Easily navigate and manage multiple products, tallies, and sensor data
- Diagnostic tests and reading to easily calibrate, tune, and troubleshoot system
- Diagnostic tri-color LED indicators reflecting power, system and connectivity status
- Compatible with ISOBUS Virtual Terminal and Task Controllers
- IP 67 environmental rating for the harshest of environmental conditions
- Integrated magnet mount option to easily attach and detach with any metal frame
- Dynamically configure run screen based on operator preferences to show most relevant data during operation
- Customizeable user interface provides flexibility to control the specific product needs and/or move between machines and implements w/o re-setting machine configurations





Raven Hawkeye 2

HAWKEYE 2 NOZZLE CONTROL

The most precise nozzle control system, Hawkeye® 2 ensures accurate droplet coverage up to 2.5 times more accurate out of the tip than comparable systems. It provides consistency across the boom which ensures precise droplet coverage, optimizing input costs. And Raven's legacy of performance and support means less downtime and more acres covered in a day.

The next generation nozzle control valve (NCV) builds upon the previous system: individual nozzle control reduces skips and overlaps; consistent droplet rate and size reduces drift and increases application quality; and turn compensation minimizes over and under application, achieving the ideal application rate across the boom.

Features & Benefits

NEXT GENERATION NOZZLE CONTROL

- Over 17% increased flow per nozzle
- Support up to 192 nozzles or 192 virtual sections
- Over 70% reduction of power consumption per nozzle
- IP69k rating per NCV

OPTIMIZABLE OPERATING RANGE

- Increased operating pressure of 10 to 120 psi

ENHANCED DIAGNOSTICS

- Independent feedback loop to RCM
- Simplified LED light on NCV lets you know when there's an issue
- Blockage Detection per nozzle

EXCLUSIVE CABLING IMPROVES PERFORMANCE

- Increased durability, power reduction, diagnostic abilities
- Over-molded connection provides UV protection and strain relief

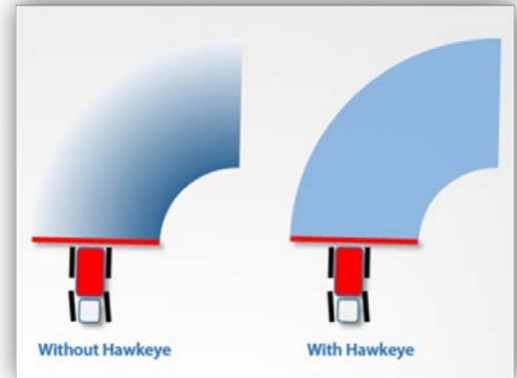
SCALABLE OFFERING GROWS WITH YOUR OPERATION

HAWKEYE 2 BASE

- PWM enabled with 16 virtual sections
- Turn Compensation
- Blockage Detection (go/no-go)

HAWKEYE 2 PREMIUM

- Individual Nozzle Control up to 192 virtual sections when paired with compatible VT



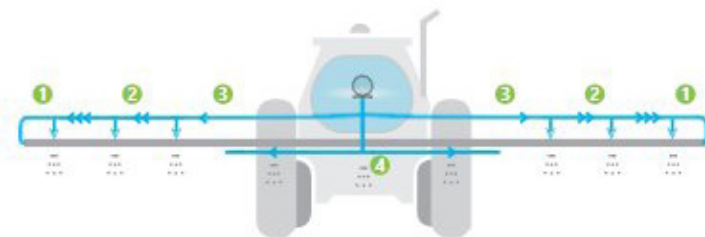
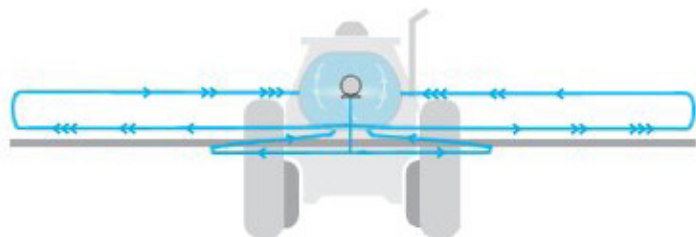
RAVEN



Raven Boom Systems



BOOM RECIRCULATION™ SYSTEM



Boom Recirculation

Boom Recirculation uses add-on hardware to aid in efficient clean out of the boom and plumbing system. By circulating liquid from the outside tip of the boom and back to the center section, product settling is reduced and waste is eliminated.

Boom Prime

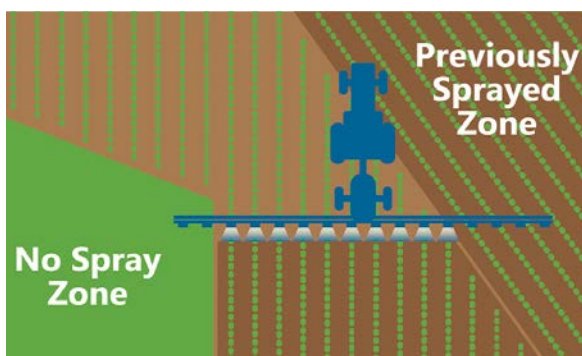
Boom Prime prepares each individual nozzle, beginning on the outside of the boom. Nozzles are opened in timed sections, each one purging remaining chemical before moving down to the next section on the boom until boom priming is complete.

ACCUBOOM™

Greater fuel and chemical savings, faster spraying times, ease-of-operation and more accurate spraying all add up quickly to improve your return on investment each and every season. Dollar for dollar, AccuBoom offers the fastest payback in precision ag equipment. AccuBoom automatic section control is your best protection against rising input costs.

Features & Benefits

- Automatic on-off control for up to 10 sections
- Eliminate costly skips and overlaps
- Adjustable look ahead function lets you adjust settings easily for the overlap you choose
- Speed compensation function accounts for how fast you are driving and ensures properly timed shut-off
- Opt. remote control to help check nozzles quickly



AUTOBOOM® XRT

Raven's latest advancement in boom control is AutoBoom XRT. Industry-leading radar sensor technology uses simultaneous ground and canopy detection to maintain optimal spray height for maximum product efficacy.

Pressure-based control allows for smooth movement and quicker reaction time while center rack stability technology with optional dampers gives the operator complete control, maximizing boom life.

Features & Benefits

- Full boom management solution maintains optimal spray height for maximum product efficacy
- Radar sensor technology
- Center rack stability technology with optional dampers
- Faster Sampling and Update Rates than standard ISO
- AutoBoom
- ISOBUS compatible



Raven RS1 | SC1 Steering

RS1™

Incredible accuracy at both high and low speeds with quick line acquire improves efficiency and gives you the power to cover more acres in a day. Best-in-class diagnostics gather machine performance data while you work, alerting Raven of issues and connecting you to support as you need it. The unit is designed with a simple set up and integrated help guides, enhanced further by Slingshot - providing remote support, file transfer, OTA software updates and fleet management and logistics.

Features & Benefits

- Enhanced Steering Performance in a wide range of terrain
- Enhanced 3D compensation for rugged terrain
- Wide Temperature Range for Inertial Sensors (-40 to 70 deg. C)
- Simplified Field Calibration Procedure
- Fully Scalable GPS Solution
- Enhanced Diagnostics and Health Tests
- Remote Service Support (OTA Updates, Remote Service, Telematics)
- Multiple Methods of System Connectivity (Cellular, WiFi, Ethernet)
- Serial GPS Output (NMEA 0183) or Radar Output
- Compatible with ISOBUS 11783 Curvature Messages for both ISO Steer Ready and Raven Aftermarket Steering Controllers



SC1™

Designed to provide cutting-edge, hands-free machine steering with incredible accuracy at both low and high speeds up to 29 mph. Coupled with a Raven field computer and GPS solution of your choice, SC1 is designed to provide cutting-edge, hands-free machine steering. Incredible accuracy at both low and high speeds up to 29 mph with quick line acquire improves efficiency and gives you the power to cover more acres in a day.

Features & Benefits

- Single product node footprint with temperature compensated internals
- Similar functionality and user interface to RS1
- Installs in cab - out of site with direct interface for ISO valve
- Enhanced steering performance with incredible accuracy up to 29 mph
- Machine-specific tune sets
- Utilizes external GPS/GNSS with Raven 500S, 600S, or third party GPS
- Utilizes internal Viper4(+) GPS/GNSS
- Ability to upgrade to Slingshot with additional hardware or GPS/GNSS solution
- Compatible with ISOBUS 11783 Curvature Messages for both ISO Steer-Ready and Raven aftermarket steering controllers
- Ability to configure third-party radio on field computer; tested and supported solutions include 450/900 Mhz AG715 radios; additional radio configurations may be compatible but require additional validation



SmarTrax MD | Sidekick Pro Direct Injection

SMARTRAX MD

Raven's simple-to-install mechanical drive steering system harnesses the newest technologies to keep you on track and on line all day long. You'll benefit from added torque for faster operating speeds, increased accuracy and reduced noise. Transfer SmarTrax MD between multiple tractors, including combines, windrowers and more.

SmarTrax MD is also the recipient of a 2014 ASABE AE50 award celebrating product innovations in agriculture, food, and biological systems.

Features & Benefits

- RTK capable
- High operating speeds
- High torque for best in class line acquire and online performance
- Simple to install and move between machines
- 3D terrain compensation
- Quiet operation



SIDEKICK PRO DIRECT INJECTION

The Sidekick Pro™ direct injection system sets a new standard for chemical applications of every type, with unprecedented precision, savings, and safety. No tank mixing required and with the industry's first automatic calibration feature, you're ready to go in minutes. Utilize Rinse Assist to automatically flush the pump quickly and thoroughly. The whole system is amazingly simple and pays off with greater precision, higher yields and unrivaled efficiency.

Sidekick Pro Features & Benefits:

- High resolution encoder that provides smoother pump control and exceptional lock on target rate technology
- Remote closed-system calibration, eliminating the need for calibration catch tests and exposure to chemicals
- Compatibility with additives that reduce maintenance on your application system
- Automatic priming feature and real-time diagnostics
- Raven CAN/ISO/ICD compatible pumps
- Pump options
 - Low volume pump with capacity of 1-40 ounces per minute
 - High volume pump with capacity of 5-200 ounces per minute

RINSE ASSIST FOR DIRECT INJECTION

Automatic rinse system that can clean the chemical out with the push of a button



700S Receiver | SCS Control Consoles

700S™ RECEIVER

The 700S is a fully scalable GNSS smart antenna that comes standard with GLONASS and Autonomous dual-frequency GL1DE™. Receive the full benefits of 700S through a simple upgrade into GS and RTK corrections to enhance the performance of your entire precision suite of technology. Upgrading to Satellite GS corrections will enhance the performance of your steering system, as well as variable rate applications, planter and seeder controls, AccuBoom™ section control and Hawkeye® nozzle control.



Need Assistance?

If you need technical support for your Raven Control systems, give our team a call.

With over 50 years of precision ag experience, our team has the knowledge and capability to handle our Raven troubleshooting calls.

800-747-8300

SCS CONTROL CONSOLES

Raven spray control systems (SCS) have been setting the standard for outstanding performance and everyday reliability and operation for more than three decades. That same measure of excellence continues today in our full line of SCS consoles, specially designed to match your application needs reliably and economically.

Whether you start small or are looking for a spray console with more performance capability, you're sure to find it in our product guide below. And when you're ready for the next step, Raven has a multi-function field computer with your name on it and a simple way to help you make the transition with our handy Switch Pro control console.

Standard SCS Console Features

- Simple operation
- Low-limit function
- Digital boom pressure read-out
- Supports a variety of Flow Meters and Control Valves
- Audible alarms
- Self-test function
- Rate bump features



Raven
invented speed
compensated
rate control in
1978.



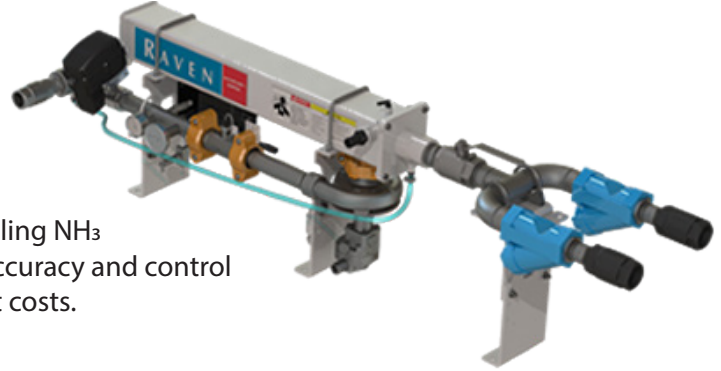
Raven Accu-Flow NH₃ Control Systems

Raven has raised NH₃ application technology to new levels of performance with the AccuFlow Vortex cooler and AccuFlow HP (high performance) Plus. Both models use super cooling technology to stabilize NH₃ as a liquid for superior accuracy and control.

Paired with your Raven control system, AccuFlow Vortex super cooling NH₃ technology replaces the dual cooler system to give you superior accuracy and control over your applications for higher yields, less waste and lower input costs.

Features & Benefits

- Reduced from 50+ fittings in older dual cooler system to less than 30 fittings for the Vortex cooler
- Gruv-lock couplings
 - Easier maintenance of the Flow Meter
 - Less than 10 min to remove and re-install flow meter
 - Only a single socket $\frac{7}{8}$ " wrench required
- Safety bleed down circuit
 - Positioned at the front of the toolbar and empties into the vapor lines
 - Additional needle valve for bleed down at the flow meter
 - Operator is removed from the point of exhaust
- Faster bleed down - 30 minutes or less for full bleed down
 - Refrigerant Line Y-Strainer
 - $\frac{1}{2}$ " strainer placed in the refrigerant or coolant line designed to catch debris before it can reach the orifice of the cooler



The High Performance Difference

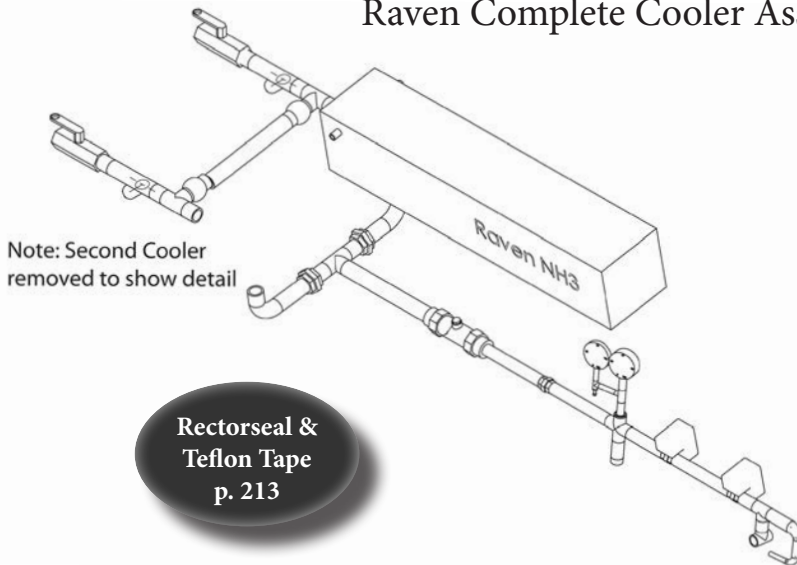
AccuFlow Vortex 1"	30 GPM*
AccuFlow Vortex 1½"	50 GPM*
AccuFlow HP Plus w/ Vortex	80 GPM*

* Systems were tested at 40° F and 60 tank PSI.



Raven Accu-Flow Parts Breakdown

Raven Complete Cooler Assembly 1¼" Inlet



NH₃
Super
Cooler

Raven
Industries

Raven Cooler Bracket
107-0171-063

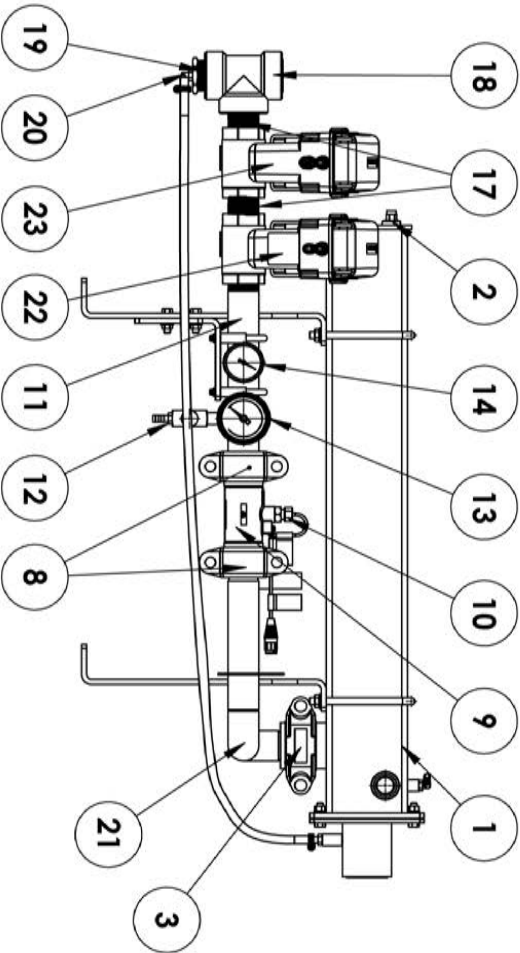
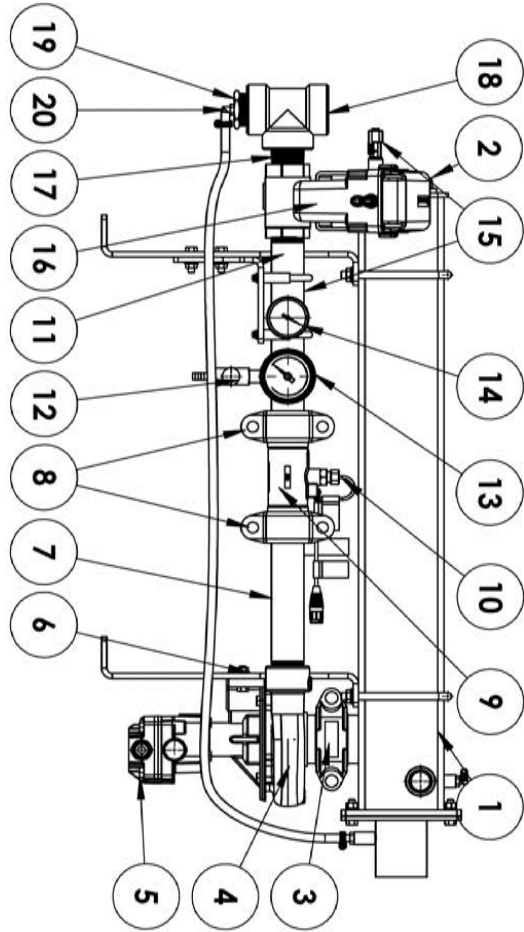
Raven Cooler Assembly

Item #	Qty.	Part #	Description
1	1	XHNIP125-12	1.25" x 12" Pipe Nipple
2	3	XHTEE125	1.25" Tee
3	10	XHNIP125-CN	1.25" x CN Pipe Nipple
4	2	XHUN125	1.25" Union
5	2	XHNIP125-4	1.25" x 4" Pipe Nipple
6	2	XHEL125-90	1.25" Elbow 90 Degree
7	2	RV063-0172-877	Raven Super Cooler
8	1	RV063-0171-666	Raven 60s Flowmeter
9	1	XHRB150-125	1.5" x 1.25" Reducing Bushing
10	1	XHRB150-100	1.5" x 1" Reducing Bushing
11	2	RV333-9000-025	1.25" Strainer With Magnet
12	2	RV019-0159-245	1.25" Valve With Rope Hole
13	2	15081007	1.25" Swivel
14	1	GF125-0015	1.25" x 15" NH3 Hose
-	1	RV219-0000-027	1.25" Union Gasket (Teflon)
-	1	RV117-0171-353	HP Pump Seal Kit
-	1	RV117-0171-354	Hyd. Motor Seal Kit

Raven Valve Assembly

Item #	Qty.	Part #	Description
1	3	XHNIP100-8	1" x 8" Pipe Nipple
2	1	XHUN100	1" Union
3	1	XHCR100	1" Cross
4	1	XHNIP100-5	1" x 5" Pipe Nipple
5	1	RV063-0172-977	Raven Control Valve
6	1	RV063-0172-978	Raven On/Off Valve
7	1	XHNIP100-2	1" x 2" Pipe Nipple
8	1	XHRB100-050	1" x .5" Reducing Bushing
9	1	XHNIP050-CN	.5" x Close Pipe Nipple
10	1	RV333-0004-009	.5" x .5" x .25" Tee
11	1	RV417-0001-009	Raven Temp Gauge
12	1	XHNIP025-2	.25" x 2" Pipe Nipple
13	1	XHTEE025	.25" Tee
14	1	AG150	150# PSI Gauge
15	1	S111410	.25" Bleeder
16	2	XHTEE100	1" Tee
17	1	XHNIP100-3	1" x 3" Pipe Nipple
18	1	XHPLUG100	1" Plug
19	1	RV333-0005-010	1' X .5" Reducing Elbow
20	1	XHNIP050-	2 .5" x 2" Pipe Nipple
21	1	RV333-0005-009	.5" x .25" Reducing Elbow
22	1	CA-1132	.25" Hose Barb
23	1	XHNIP100-CN	1" x Close Pipe Nipple

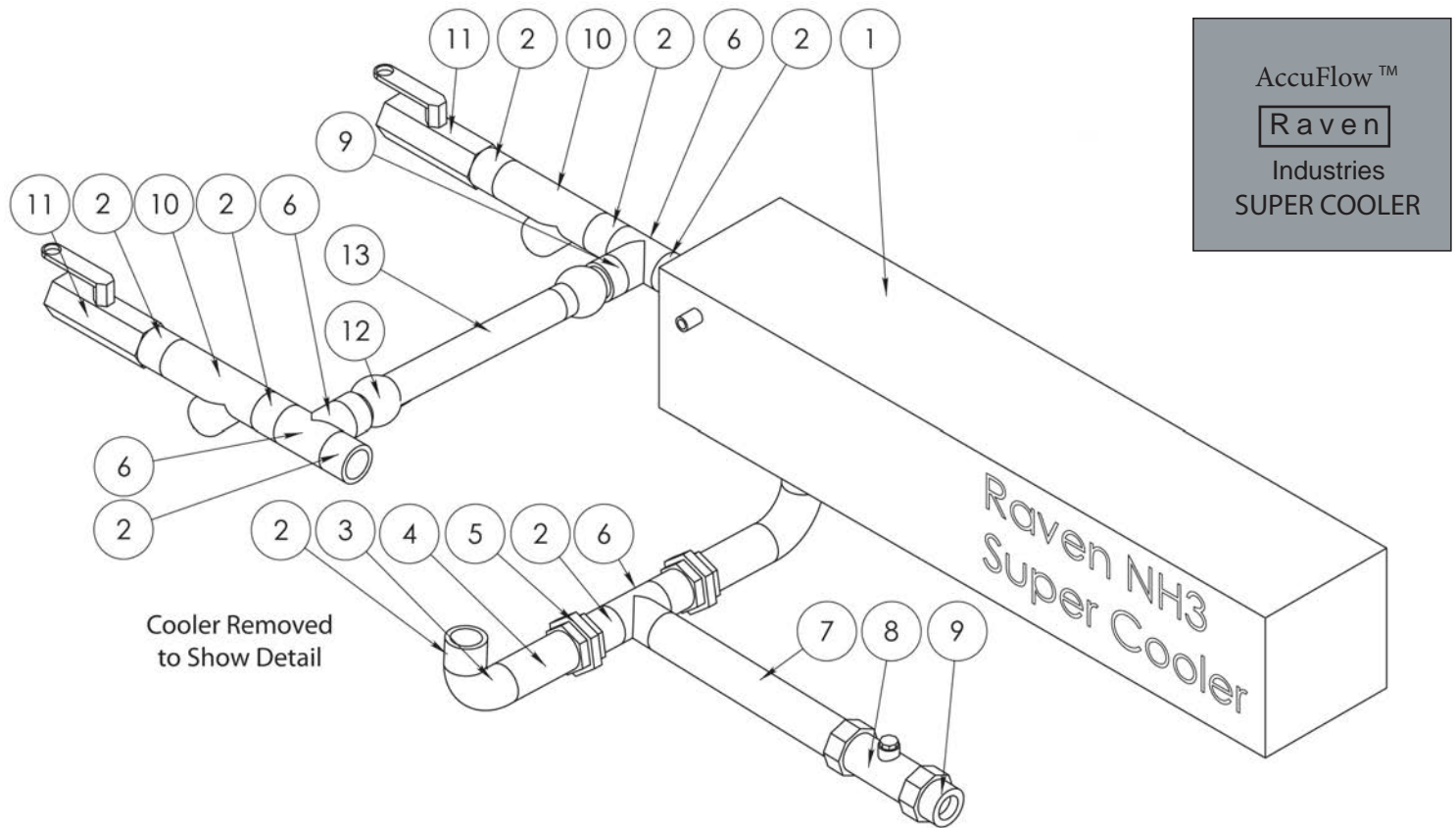
Raven Vortex Breakdown



NO. PART NO.	DESCRIPTION	QTY.
1 RV063-0173-663	Cooler Assembly, Vortex	1
- RV117-0171-591	Vortex Cooler Seal Kit	1
2 CA400	Relief Valve	1
3 RV333-0006-031	Coupling, Grov-Lok 2.5"	1
- RV219-0003-266	Coupling Gasket, 2.5"	1
4 RV416-1001-010	HP+ NH3 Boost Pump*	1
- RV117-0171-577	HP+ NH3 Boost Pump Seal Kit*	1
5 RV416-8000-005	HP+ Hyd Motor*	1
- RV117-0171-576	HP+ Hyd Motor Seal Kit*	1
6 RV334-0001-042	HP+ PWM Hyd Valve*	1
7 RV019-0159-591	Pipe Nipple, Grov-Lok*	1
8 RV333-0006-032	Coupling, Grov-Lok 2" x 1.5"	2
- RV219-0003-267	Coupling Gasket, 2" x 1.5"	2
9 RV063-0173-618	RFM 60SG NH3 Flowmeter, Grov-Lok	1
- RV117-0171-590	RFM 60SG Parts Kit	1
10 RV063-0171-669	Flowmeter Sensor	1
11 RV116-0159-743	Gauge Tree Manifold 1.5"	1
12 S118203	.25" Bleed Valve	1
13 RV417-0001-031	Temp Gauge	1
14 RV417-0001-030	Pressure Gauge	1
15 RV422-0000-090	Pressure Transducer, MetriPack*	2
- RV422-0000-119	Pressure Transducer, Deutsch*	2
16 RV063-0173-626	Fast Valve Assembly 1.5"	1
- RV063-0173-666	Fast Valve Motor Only*	1
- RV334-0001-066	Valve Only 1.5"	1
17 XHNP150-CN	Nipple 1.5" x Close	1
18 XHTE150	Tee 1.5"	1
19 XHRB150-025	Reducing Bushing 1.5" x .25"	1
20 PPHB025/038SS-90	Hose Barb 90° .25 x .375 Hose	1
21 RV116-0159-752	Cooler Outlet Manifold**	1
22 RV063-0173-667	Control Valve 1.5"	1
- RV063-0173-664	Control Valve Motor Only**	1
- RV334-0001-066	Valve Only 1.5"	1
- RV063-0173-668	On/Off Valve 1.5"	1
- RV063-0173-664	On/Off Valve Motor Only**	1
- RV334-0001-066	Valve Only 1.5"	1

* Vortex HP+ Only ** Vortex Only

Raven Accu-Flow Parts Breakdown



1 ½" AccuFlow Cooler

Item No.	Part No.	Description	Qty.
1	RV063-0173-314	Raven Super Cooler	2
2	XHNIP150-CN	1.5" X CN Pipe Nipple	10
3	XHEL150-90	1.5" Elbow 90 Degree	2
4	XHNIP150-4	1.5" X 4" Pipe Nipple	2
5	XHUN150	1.5" Union	2
6	XHTEE150	1.5" Tee	3
7	XHNIP150-12	1.5" X 12" Pipe Nipple	1
8	RV063-0171-666	Raven 60s Flowmeter	1
9	XHRB150-125	1.5" X 1.25" Reducing Bushing	3
10	RV063-0173-312	1.5" Strainer with Magnet	2
11	RV019-0159-571	1.5" Valve with Rope Hole	2
12	15081007	1.25" Hose Swivel	2
13	GF125-0015	1.25" x 15" NH3 Hose	1

1 ½" Plumbing

Item No.	Part No.	Description	Qty.
1	XHNIP125-8	1.25" x 8" Pipe Nipple	3
2	XHUN125	1.25" Union	1
3	XHNIP125-6	1.25" x 6" Pipe Nipple	1
4	RV063-0173-202	Raven Control Valve	1
5	RV063-0173-203	Raven On/Off Valve	1
6	XHNIP125-2	1.25" x 2" Pipe Nipple	1
7	XHTEE125	1.25" Tee	3
8	XHNIP125-CN	1.25" x CN Pipe Nipple	1
9	XHEB125-050	1.25" x 5" Reducing Bushing	2
10	XHNIP050-2	.5" x 2" Pipe Nipple	2
11	XHEL050-90	XHEL050-90	1
12	XHTEE050	.5" Tee	1
13	RV333-0002-006	.25" x 3.75" Hose Barb	2
14	XHNIP050-1.5	.5" x 1.5" Pipe Nipple	1
15	RV333-0004-009	.5" x .5" x .25" Tee	1
16	RV417-001-009	Raven Temp Gauge	1
17	XHNIP025-2	.25" x 2" Pipe Nipple	1
18	XHCR025	.25" Cross	1
19	AG150	150# PSI Gauge	1
20	XHPLUG025	.25" Plug	1
21	SII1410	.25" Bleeder	1

CONTROL CONSOLE
S33 440: 063-0171-183

PRESSURE SENSOR CABLE
10: 115-0171-152
12: 115-0171-151
17: 115-0171-224
20: 115-0171-153
26: 115-0171-156
30: 115-0171-176

PRESSURE SENSOR (MANIFOLD PRESSURE)
422-0000-059 (SEE BELOW FOR LOCATION)

RADAR POWER CABLE
12: 115-0159-539

SPEED EXTENSION CABLE
10: 115-0171-282
12: 115-0159-032
18: 115-0171-239
20: 115-0171-015
24: 115-0171-241
34: 115-0171-225

EXTENSION CABLES
3 SECTION
12: 115-0159-856
24: 115-0159-857

OR

EXTENSION CABLES
6 SECTION
12: 115-0171-840
24: 115-0171-841

NOTE: 6 SECTION REQUIRES POWER CABLE 115-0171-844

VEHICLE BATTERY
+12 VDC

REFER TO SAFETY SECTION IN MANUAL

SPEED SENSORS
RADAR (RADAR ONLY): 063-0172-143
RADAR (KIT WITH POWER CABLE): 117-0159-822
** WIDE VARIETY OF WHEEL DRIVE, SPEEDOMETER AND RADAR ADAPTER CABLING. CONSULT RAVEN SALES REPRESENTATIVE FOR PART NUMBERS **

ON/OFF VALVE EXTENSION CABLES: (OPTIONAL)
6: 115-0171-832
12: 115-0171-833
24: 115-0171-834

FLOW CABLE
3 SECTION: 115-0171-836 (NOT SHOWN)
6 SECTION: 115-0171-838

ACCU-FLOW KIT
117-0171-161

ACCU-FLOW
30 GPM: 063-0172-991

MASTER ON/OFF VALVE

OPTIONAL PRESSURE SENSOR
(422-0000-059)
SEE ABOVE FOR CABLING

STANDARD VALVE
063-0172-917

FLOW METER
063-0171-666

DIRECTION OF FLOW

CHECK VALVE AND FLOW DIVIDER REQUIRED WHEN SECTION ON/OFF VALVES ARE MOUNTED NEXT TO MANIFOLDS. SEE SECTION IN MANUAL FOR MULTIPLE SECTION SHUT OFF WITH 2 VALVE SYSTEM.

SECTION ON/OFF VALVE
063-0172-978
UP TO 6
ADDITIONAL VALVES

CHECK VALVE ASSY
MULTI-SECTION
063-0173-030

ACCU-FLOW SYSTEM WITH SPACE SAVER KIT 117-0159-723 (FOR 30 GPM ACCU-FLOW SYSTEM ONLY)

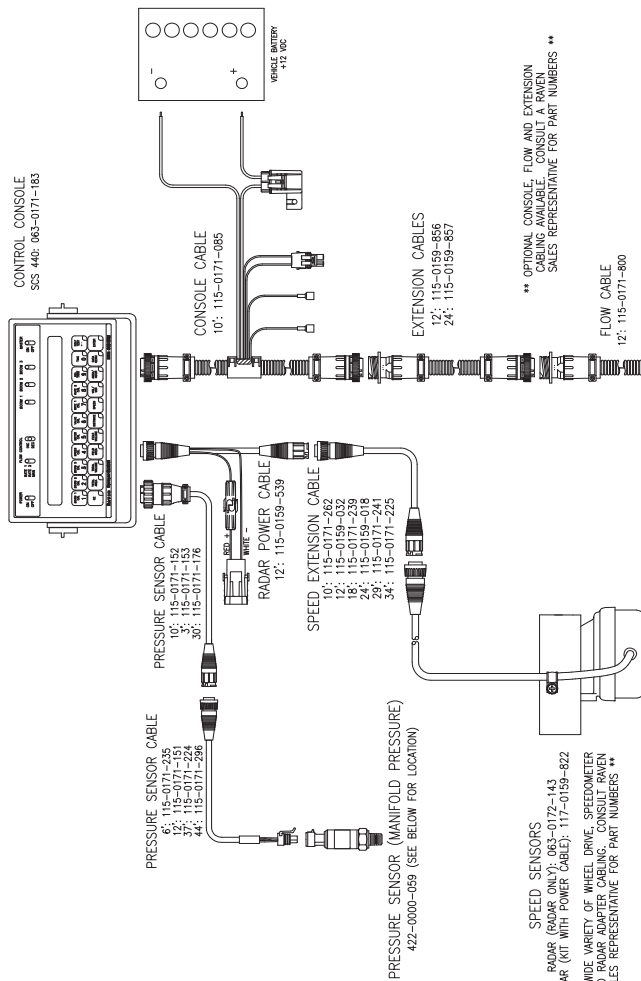
ECO NO.	ORIGIN.	SERV. MGR.	PROD. CHAMP.	ENG.	DRAFT.	REV.	DRAWING NO.
E12904	LAA1	TAC	DNR	SSJ	MAP	A	054-2800-003
E13869	JDB	TAC	DNR	NAP	MAP	B	054-2800-003



Raven Products

SCS 440 WITH ACCUFLOW, 2 VALVE SYSTEM SINGLE SECTION BAR

(INCLUDES STANDARD VALVE AND MASTER ON/OFF VALVE)



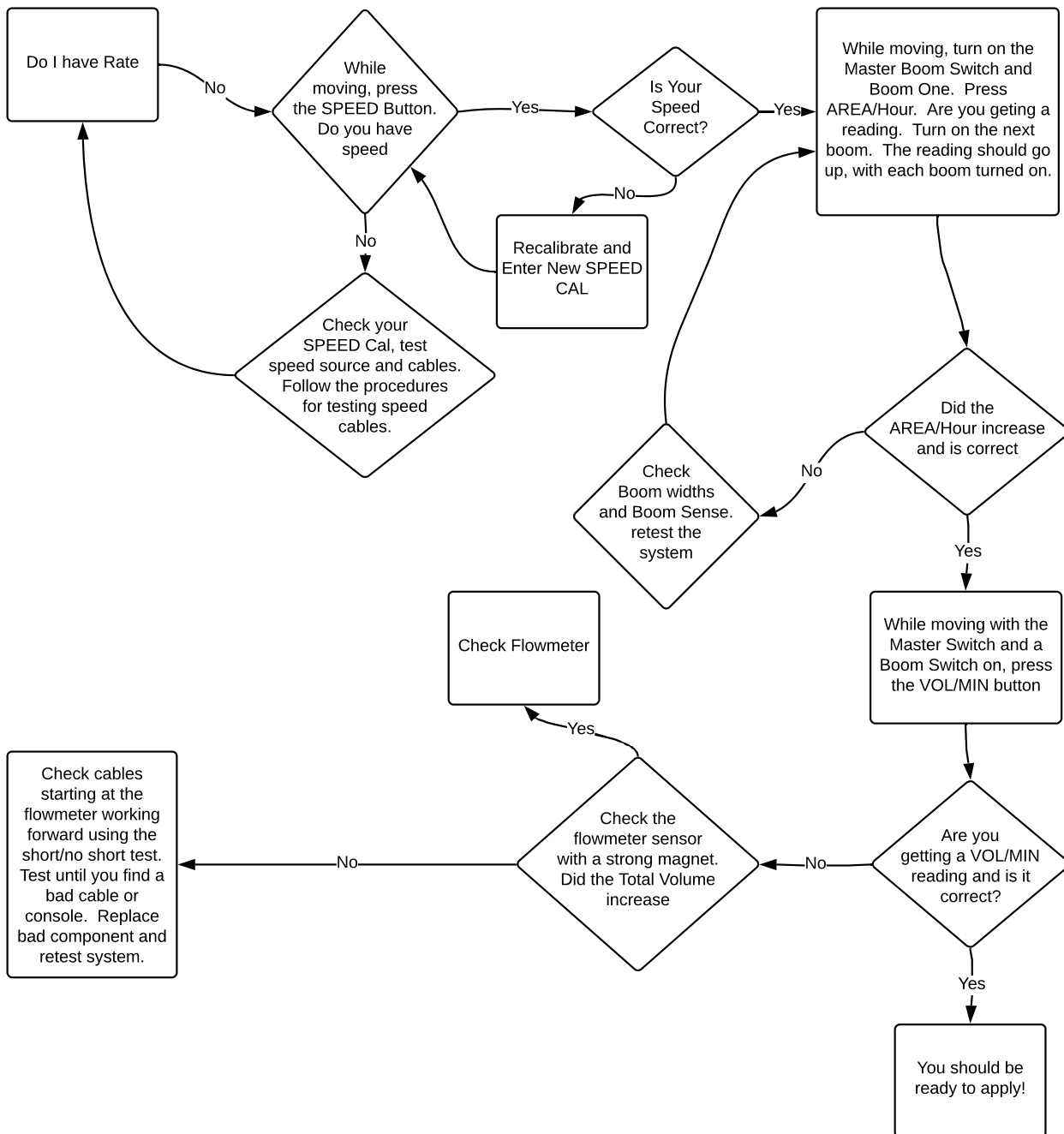
REFER TO SAFETY
SECTION IN MANUAL

** OPTIONAL CONSOLE, FLOW AND EXTENSION
CABLES ARE AVAILABLE. SEE RAVEN
SALES REPRESENTATIVE FOR PART NUMBERS **

SPEED SENSORS
RADAR (RADAR ONLY): 063-0172-143
RADAR (KIT WITH POWER CABLE): 117-0159-822
** WIDE VARIETY OF WHEEL DRIVE, SPEEDOMETER
AND RADAR ADAPTER CABLES. CONSULT RAVEN
SALES REPRESENTATIVE FOR PART NUMBERS **

ECO NO.	ORIGIN.	SERV. MGR.	PROD. CHAMP.	ENG.	DRAFT.	REV.	DRAWING NO.
E12904	LAA1	TAC	DNR	SSJ	MAP	A	054-2800-001
E13869	JDB	TAC	DNR	NAP	MAP	B	054-2800-001

Raven “No Rate” Flowchart





Raven Replacement Parts List

SCS440/450 NH3 & Cabling	
SCS 450 Console	RV063-0171-220
SCS 440/450 Console Bracket	RV106-0159-437
SCS 440/450 Console Bracket Knobs	RV106-0159-438
SCS 440/450 Console Cable	RV115-0171-085
SCS 440/450 Flow Cable Single Section	RV115-0171-800
SCS 440/450 Flow Cable Three Section	RV115-0171-836
SCS 440/450 Flow Extension Cable 12'	RV115-0159-856
SCS 440/450 Flow Extension Cable 24'	RV115-0159-857
Adapter Cable for New Flow Cable to Old Control Valve	RV115-0171-857
Adapter Cable for New Flow Cable to Old On/Off Valve	RV115-0171-856
Adapter Cable for Old Flow Cable to New Control Valve	RV115-0171-807
Adapter Cable for Old Flow Cable to New On/Off Valve	RV115-0171-808
On/Off Valve Extension Cable 6'	RV115-0171-832
On/Off Valve Extension Cable 12'	RV115-0171-833
On/Off Valve Extension Cable 24'	RV115-0171-834
Suction Cup Mount 4½"	WPGLJ45AMC

AccuFlow Cooler Kits	
Raven AccuFlow Vortex HP+ w/ Fast Valve, Dual Inlet, SS	RV117-0171-714
Raven AccuFlow Vortex w/ Fast Valve, Dual Inlet, SS	RV117-0171-715
Raven AccuFlow Vortex w/ Dual Valves, Dual Inlet, SS	RV117-0171-716
Raven AccuFlow Vortex w/ Fast Valve, Single Inlet, SS	RV117-0171-717
Raven AccuFlow Vortex w/ Dual Valves, Single Inlet, SS	RV117-0171-718
Raven AccuFlow Vortex w/ Dual Valves, Dual Reverse Inlet, SS	RV117-0171-720
Raven AccuFlow 1" Vortex w/ Dual Valves, Dual Inlet, SS	RV117-0171-730

Non-Vortex Valves and Motors	
Control Motor Assembly (1" or 1¼")	RV063-0173-206
Control Valve 1"	RV063-0173-877
On/Off Motor Assembly (1" or 1¼")	RV063-0173-207
On/Off Valve 1"	RV063-0173-876
Fast Valve 1"	RV063-0173-878
Fast Valve Motor Assembly	RV063-0172-982
Valve Only 1"	RV117-0171-686
Adapter bracket for Raven Motor to Continental Valve	CA-BVT-RMB
Continental Full Port Valve 1¼"	CA-BVT-125

Non-Vortex Flowmeter	
Flowmeter 1½" SS	RV063-0173-867
Flowmeter Rebuilt Kit for RFM60, 60SG	RV117-0171-590
Flowmeter Sensor Standard	RV063-0171-669
Flowmeter Sensor High Pulse	RV063-0172-004

Raven Replacement Parts List



Non-Vortex AccuFlow Parts	
Cooler Seal Kit (Complete Kit)	RV117-0171-121
Cooler Square Gasket Only for New Style Coolers	RV219-0000-143
O Ring for Cooler (2 Needed)	RV219-0000-036
Strainer Complete 1¼"	RV333-9000-025
Strainer Gasket 1¼"	RV219-0000-091
Strainer Screen 1¼"	RV333-9000-032
Strainer Complete 1½"	RV063-0173-312
Strainer Gasket 1½"	RV219-0000-154
Strainer Gasket Thick 1½"	YS12CITEFLON
Strainer Screen 1½"	RV333-9000-067
Strainer Magnet 1¼", 1½", 2"	RV418-0000-001
NH3 Temp Gauge	RV417-0001-009
Union Gasket 1¼"	RV219-0000-027
Union Gasket 1½"	RV219-0000-156
Union Gasket 1"	RV219-0000-076

SideKick Parts	
SideKick Balls for Solid Shaft	RV321-0000-380
Sidekick Check Valve with Extreme Viton (½")	RV333-0011-102
Sidekick Check Valve with Viton (⅜")	RV333-0011-078
SideKick Console Cable	RV115-0171-130
SideKick Exhaust Valve	RV063-0172-504
SideKick Exhaust Valve with Pressure Sensor Port ¼"	RV063-0173-310
Sidekick Flow Sense Adapter Cable (New cable/Old Sensor)	RV115-0172-111
Sidekick Flow Sense Adapter Cable (Old cable/New Sensor)	RV115-0172-110
Sidekick Flow Sensor (Conxall/New style)	RV063-0173-492
Sidekick Flow Sensor (Weatherpack/Old style)	RV063-0171-979
SideKick High Volume Motor Only	RV063-0172-500
SideKick Implement Cable	RV115-0171-138
SideKick Intake Valve	RV063-0173-677
SideKick Low Volume Motor Only	RV063-0172-527
SideKick Motor Bearing	RV063-0172-501
SideKick Piston	RV107-0172-467
SideKick Pro High Volume Complete	RV063-0173-200
SideKick Pro ICD High Volume Complete	RV063-0173-781
SideKick Pro ICD Low Volume Complete	RV063-0173-780
SideKick Pro ISO High Volume Complete	RV063-0173-421
SideKick Pro ISO Low Volume Complete	RV063-0173-420
SideKick Pro Low Volume Complete	RV063-0173-201
SideKick Pump Head	RV107-0171-526
SideKick Pump Only	RV063-0172-924
SideKick Pump Seal Kit	RV117-0159-987
SideKick Solid Shaft	RV063-0173-398
SideKick Tach Feedback Generator High Volume	RV063-0172-312
SideKick Tach Feedback Generator Low Volume	RV063-0172-935
SideKick Vacuum Switch	RV063-0171-035



Raven Replacement Parts List

AccuFlow HP Parts	
AccuFlow HP Hyd Motor Seal Kit	RV117-0171-354
AccuFlow Nh3 Pump (Hypro) ***No Longer Available***	RV416-1001-009
AccuFlow NH3 Pump Seal Kit (Hypro)	RV117-0171-353

AccuFlow Vortex Valves & Motors	
Control Valve Complete 1½"	RV063-0173-667
Control Valve Motor Assembly	RV063-0173-664
Fast Valve Complete 1½"	RV063-0173-626
Fast Valve Motor Assembly	RV063-0173-666
ON/Off Valve Complete 1½"	RV063-0173-668
ON/Off Valve Motor Assembly	RV063-0173-665
Valve Position Indicator Kit	RV117-0171-219

AccuFlow Vortex Flow Meter	
Flowmeter Rebuilt Kit for RFM60, 60SG	RV117-0171-590
Gruv-Lok Coupling with EPDM Gasket 2" x 1 ½"	RV333-0006-032
Gruv-Lok EPDM Gasket Only	RV219-0003-267
RFM 60SG Flowmeter	RV063-0173-869

AccuFlow Vortex Parts	
Bleed Valve ¼"	S111411
Check Valve 1½" SS	S111399/CA-15BC
Gruv-Lok Coupling with EPDM Gasket 2"	RV333-0006-033
Inlet Shut Off Valve 2"	RV063-0173-627
Inlet Y-Manifold	RV116-0159-742
Inlet Y-Manifold Kit 2"	RV117-0171-578
NH3 Pressure Gauge	RV417-0001-030
NH3 Temp Gauge	RV417-0001-031
Pressure Transducer Adapter from Detutsch Cable to Metripak	RV115-0172-122
Pressure Transducer with Round Metripak Connection	RV422-0000-090
Pressure Transducer with Triangle Deutsch Connection	RV422-0000-119
PWM Hydraulic Valve	RV334-0001-042
Relief Valve	CA-400-C
SS Vortex Cooler Assembly	RV063-0173-987
Strainer ½" Strainer Assembly	RV063-0173-897
Strainer ½" Complete Kit	RV117-0171-697
Strainer ½" Gasket	RV219-0000-167
Strainer ½" Magent	RV418-0000-010
Strainer ½" Screen	RV333-9000-076
Strainer 2" 40 Mesh Strainer Screen	RV333-9000-071
Strainer 2" Complete	RV063-0173-655
Strainer 2" Gasket	RV219-0000-161
Strainer Magnet 1¼", 1½", 2"	RV418-0000-001
Vortex Cooler Seal Kit	RV117-0171-591

Raven Replacement Parts List



AccuFlow HP+ Parts	
HP+ Boost Bearings (2 Required) (Ace)	BAC-37
HP+ Boost O'Ring (Ace)	BAC4A-E
HP+ Boost O'Ring (Ace)	40169
HP+ Boost Pump (Ace)	RV416-1001-010
HP+ Boost Pump Seal (Ace)	BAC-75CE
HP+ Boost Pump Seal Kit (Ace)	RV117-0171-577
HP+ Hydraulic Motor Seal Kit	RV117-0171-576

Raven CAN Parts	
Multi-Product Node	RV063-0173-236
Node Cable 3 Section	RV115-0171-946
Node Cable 6 Section	RV115-0171-947

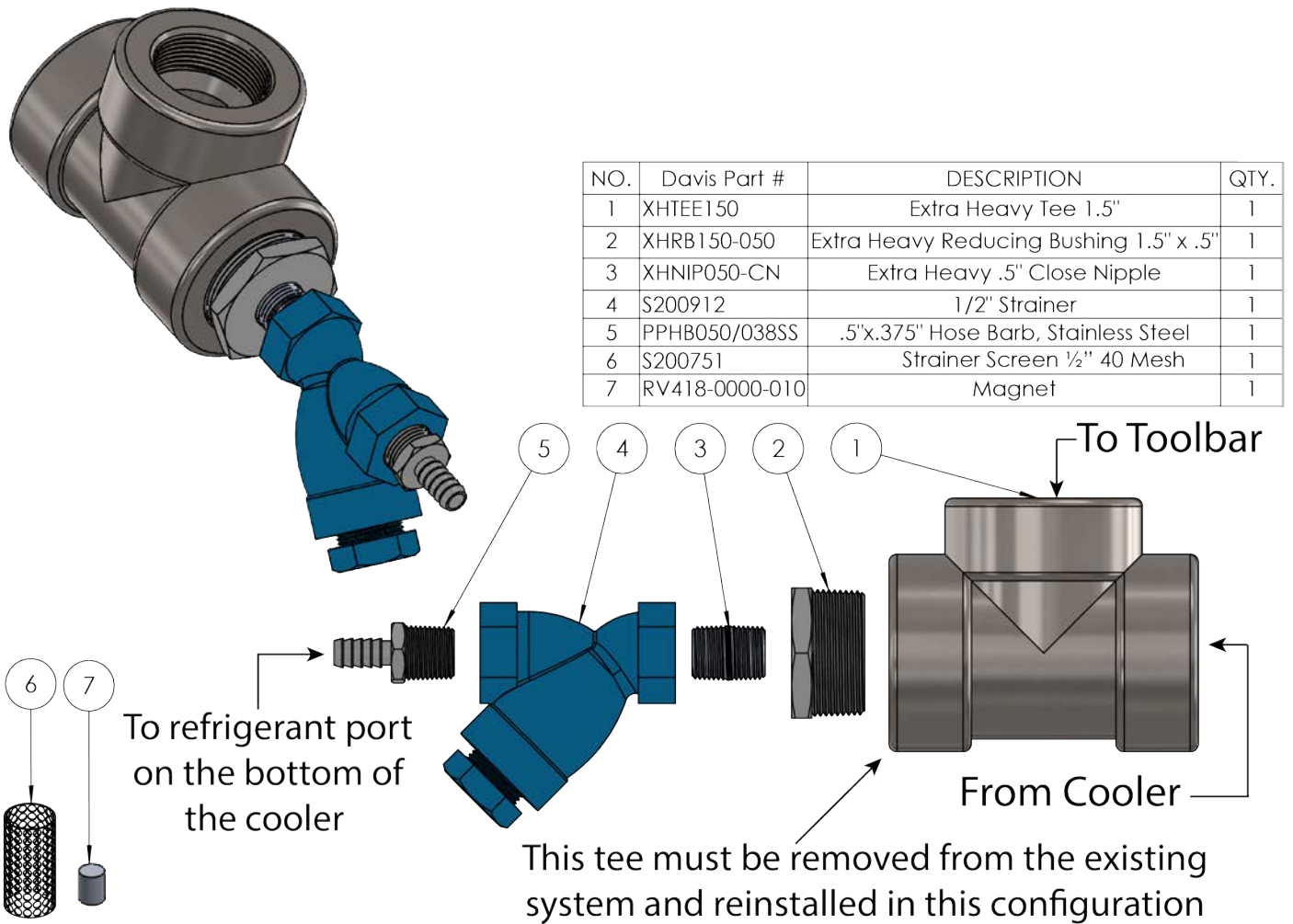
Raven ISO (Gen I) Parts	
ISO Product Control Node	RV063-0173-006
Node Cable 3 Section	RV115-0171-946
Node Cable 6 Section	RV115-0171-947

Raven RCM Parts	
RCM Level 1 Kit (GEN III Cabling)	RV117-7100-002
RCM Level 2 Kit (GEN III Cabling)	RV117-7100-003
RCM Level 1	RV063-0173-941
RCM Level 2	RV063-0173-756
RCM Mounting Bracket Kit	RV117-0171-680
RCM Magnet Mount Kit	RV117-0717-648

Raven RCM GEN III Cabling	
Extension Cable 12' GEN III	RV115-7300-075
Extension Cable 6' GEN III	RV115-7300-074
Foot Switch	RV063-0173-080
Foot Switch Cable 23' GEN III	RV115-0172-398
IBIC to GEN III Cable (Hitch Cable) 20'	RV115-7300-118
IBIC to GEN III Cable (Hitch Cable) 24'	RV115-7300-119
RCM 47 Pin to 440 16 Pin Adapter	RV115-7347-012
RCM AccuFlow Cable 3 Section GEN III	RV115-7347-005
RCM Node Cable GEN III	RV115-7301-011
SideKick Pro Cable GEN III	RV115-7301-016



Raven Refrigerant Line Strainer



Raven System Components



SkyTrak GPS Speed Sensor

Never Buy Another Radar Gun! The SkyTrak speed sensor brings the accuracy and ease of installation of a GPS receiver to equipment designed to measure speed pulses, such as automatic rate.

Features & Benefits

- Completely self-contained (GPS receiver, antenna, and velocity to pulses converter)
- Raven® 3-pin Radar Connector
- Micro-Trak® Connector
- Dickey-John radar 4-pin connector
- Channel GPS receiver

58.94 pulses / MPH (Can be used with all equipment that is compatible with radar type speed sensors)

0.1 MPH accuracy from 0.5 to 50 MPH (9 Hz update rate.)

- Surface, bracket, pipe, or magnetic mount

Physical Specifications

- Enclosure: UV stable plastic, fully sealed
- Cable Length: 15 feet
- Power: 8 to 16 Volts, 0.1 Amps max.
- Size: 4.50 x 2.43
- Operating Temp: -30 Deg. C to +65 Deg. C (-22 Deg. F to +140 Deg. F)



Part No.	Description
S113593	Sky Trak
DS-GPSM-R10-WHT	GPS Sensor



Flow Meters/Valves



Part No.	Description
063-0171-066	RFM-100 Poly



Part No.	Description
063-0171-793	RFM-60P



Part No.	Description
063-0171-666	RFM-60S
063-0173-618	Gruv-Lok Flow Meter



Part No.	Description
063-0159-574	RFM-200



Part No.	Description
063-0159-751	RFM-200 Poly

Gruv-Lok Flow Meter Conversion



Part No.	Description
VIC2125M	Vic X 1¼" Male Pipe
VIC2150F	Vic X 1½" Female Pipe
VIC2150M	Vic X 1½" Male Pipe

Regulating Valves

2" Stainless-Steel Butterfly Valve



2" Stainless Steel butterfly valve. For use with high volume applications and high pressure, 300 PSI rating. Viton o' rings and seals.

Part No.	Description
063-0172-177	Control Valve



1" And 1 ½" Poly Butterfly Valve

All polypropylene construction features high torque, 12V DC motor. 175 PSI rating. For use with chemicals and liquid fertilizers.

Part No.	Description
063-0172-125	1" Valve
063-0171-894	1½" Valve